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CERTAIN RESULTS OF THE JOB COUNSELING SERVICE OF THE BOSTON Y.M.C.A.

Submitted by

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Master of Education

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CERTAIN RESULTS OF

THE JOB COUNSELING SERVICE

of the

HUNTINGTON AVENUE BRANCH

of the

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

A PROJECT IN ADULT EDUCATION

PRIMARILY FOR YOUNG MEN

Study of 105 Cases

1934-35

THE JOB COUNSELING SERVICE

Operating Committee

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Dr. Fred C. Smith
Dr. Karl M. Bowman
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Mr. William J. Riley
Mr. Herbert W. Saul

PREFACE

This study came out of the desire of the staff and operating committee of the Job Counseling Service of the Boston Y. M. C. A. for an impartial appraisal of the value of the service to the young men who have gone through it, and for suggestions for its improvement.

I have attacked the problem with no preconceived notion of what such a service should be, but simply as an inquirer who is greatly interested in the problem of guidance, has made some study of its functions and workings, and has done a small amount of work as a counselor.

In this analysis I hope to be able to point out ways and means for a wider service to take its place as a community enterprise, the value and future of which should be limitless.

I wish to acknowledge the kindly and constructive advice and suggestions of Dr. Jesse B. Davis and Dr. Roy O. Billett, of the School of Education, and the helpful co-operation of Mr. William J. Riley, and his staff, of the Job Counseling Service.

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CERTAIN RESULTS OF THE JOB COUNSELING SERVICE

OF THE BOSTON Y.M.C.A.

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CHAPTER I

INTRODUCTION

CHAPTER I

INTRODUCTION

Statement of the Problem.-- When a service of any sort has been running for three or four years, and when that service has "put through the hopper" approximately1500 young men whose destinies, vocationally and socially have been influenced by the results of the service, then there arises an ever-intensifying question: "Has the service done the job for which it was intended? Are the young men benefiting materially and spiritually from the work which has been done in their behalf? Has this service a well-defined place in the community, and has the service earned a right to its continuance?"

In this case, the "service" is the Y.M.C.A. Job Counseling Service, conducted for the past three years at the Huntington Avenue Branch of the Boston "Y", to test, psychometrically, men from 18 to 35 years of age, and to attempt as a result of the findings from these tests to adjust the men more successfully to life, particularly through advanced education, and through the choice of a suitable vocation and the securing of a worth-while job. The job is not placement, except incidentally. It is almost entirely adjustment.

From the point of view of the "counselees": the young men who have taken the Job Counseling Course -- has the service been successful? After sufficient time has elapsed so that the men look at the service with some perspective, do they feel that something of lasting value has been added to their lives?

Tests as Vocational Guides.-- If the tests used can be considered as at least reasonably accurate measures of aptitudes and abilities, then it would seem likely that a man so tested should discover definite personality traits that would lead him to feel that his greatest hope for vocational success lay in one general field of work rather than in another.

To illustrate: If a man shows high ability to learn, a dominant and self-sufficient personality, ability to grasp details, emotional stability, and an unusually high interest in the same sort of things in which successful life insurance salesmen are interested, it would seem to indicate that he would make good in that field, and that probably he might aspire some day to be a general agent, or a supervisor of agencies, inspiring other men to success as salesmen.

On the other hand, given a man of equal ability to learn and to analyze, emotionally stable, and with

a high interest in accounting, though with a particularly submissive nature, that man might also make good in insurance, but his work would be as an actuary or in some other office position. His lack of dominant self-assertiveness would make it extremely difficult for him ever to make a successful salesman.

One of the purposes of our investigation is to learn whether this relationship between test results -- psychometric measurements -- and vocational success exists in a sufficiently large proportion of cases to have a high validity. Is it wise, in other words, to advise a young man to do the things that his measurements indicate he <u>might</u> do with a reasonably high expectation of success? Will he <u>probably</u> be successful? Or is this relationship so slight as to be of little significance?

If our belief in the efficacy of the tests is well founded, then we should find in the later results achieved by the counselees evidences of the close relationship between aptitudes, abilities and interests as shown by the tests and vocational choices made as a result of the counseling.

Finally, we want to find ways of improving the service, and of making it more closely knit to the needs of the young men who come under its influence.

Limitations of the Study.-- Of the approximately 1500 young men who have taken advantage of the service, we are attempting to secure a complete case-history of 100, including:

a. Their test results.

b. Reports by their counselors.

c. The reactions of counselees to the service as reflected by answers to a questionnaire sent them two years after they went through the course.

d. Educational history, both before and after the course.

e. Work history, both before and after the course.

f. Relationships found between test results and educational and work history.

g. Direct or indirect results of the course.

Since, in the early days of the course records were not always kept in complete form, we are starting with 200 cases, divided among the first three groups of counselees, with the hope that from this number we may secure at least 100 complete reports.

In selecting this group for study, we decided that those who had been through the service for the longest time should show the most decided results --

not that they would be the best results, but that sufficient time would have elapsed between the time of taking the course and the time of the study to give ample opportunity for the seeds planted by the course to take root and sprout if ever they were to show signs of life. In other words, taking the two groups who went through the course during the last months of 1932 and as many of the immediately succeeding group as would make up 200 in all, we have an elapsed time of approximately two years during which the counselees might have shown definite results for better or for worse from the information and advice they received at the "Y" and from the individual counselors. We felt that this group of 200 would represent with reasonable accuracy the total of 1500 who have taken the course, and that such changes as may be noted from group to group are not sufficiently significant to invalidate our findings.

We believed that if we could secure data on 100 cases scattered at random through this group of 200 that our information and results would then be representative both of the 200 group and of the entire 1500. Comparisons between the test results of our group and of other groups (see pp.62-66) are significantly close, and appear to indicate that this group is representative of the entire 1500.

CHAPTER II

HISTORY OF THE JOB COUNSELING SERVICE

1932-1935

CHAPTER II

HISTORY OF THE JOB COUNSELING SERVICE, 1932-35

Before giving a detailed description of the study and its results, a brief history of the Job Counseling Service and of the needs from which it arose is necessary as a background.

To quote William Jowett Riley, Director, Vocational Guidance Department, Boston Y.M.C.A, Huntington Avenue Branch[1]: "The job counseling service was established to serve the young men between the ages or eighteen and thirty-five....

"The project is now entering upon its third year of service....

"Certain facts stand out very clearly with reference to the thousands of young men who have come seeking aid during the last few years. Practically all are searching for work. A great majority have sensed the need or developing a life-career plan or some sort. There is definite evidence or constantly lowering individual morale resulting from an increasing feeling of unacceptability. In many cases there is definite evidence of a sense of being unwanted. Many or the young

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1. Reprinted from "EDUCATION" for November, 1934

CHAPTER II

men lately graduated from colleges and universities have met conditions totally different from those to which they had been accustomed during their four or more years of college work. During that period, many of them had a wholesome feeling of acceptability, educationally and vocationally, at least in the cases of those who had helped to defray school expenses by outside work. After leaving college they entered areas and met conditions where they were not acceptable, vocationally, where such training as they had received seemed of little value.

"This sort of unacceptability, social and vocational, brought in its train methods of thinking and appraisal quite inadequate to bring about a solution of individual problems. The thinking of young men became vicious. Intelligent self-analysis became difficult and well-nigh impossible. In like manner, analysis of economic conditions and work possibilities became increasingly difficult. The need for guidance became overwhelmingly apparent and the job counseling project grew into being enlisting in its work the best-trained men in the community."

Principles of the Service.-- "The main principles of the service are as follows:--

(1) To help young men to understand themselves better, especially with reference to vocational assets and liabilities. In order that members in the group might be homogeneous, enrollment was limited to those who had completed high school work and were between the ages of eighteen and thirty-five.

(2) To aid young men to understand better economic and social conditions.

(3) To bring about a sense of heightened morale and social and vocational acceptability by means of reference of individual members of the group to trained, intelligent and sympathetic counselors.

(4) To aid young men to better their job-finding techniques.

(5) Not only is there evidence of a lack of clarity of thinking of unemployed young men but there is likewise definite evidence of lack of physical hardness sufficient to permit young men to carry on the activity of the job of finding work. With this thought in mind, each member of the group has been granted membership in the Y.M.C.A. in order that he may not only have the benefit of a medical and physical examination, but may make use of the other various facilities of the organization.

"In order to meet the above objectives, the program was set up with five essential elements. The first element in the project was a group of six evening meetings, each addressed by an outstanding leader in his field, which had for their purpose the orientation of the individual member of the group, and served as background material as the individual progressed in the course. The second element of the project was a group of some dozen or more afternoon meetings dealing with different types of occupations, business, industrial and professional. The third element was a comprehensive testing program touching upon school ability, vocational aptitudes, occupational interests, social behavior patterns and personality traits. The fourth element of the project centered about the reference of each young man in the group to a capable counselor. The fifth element was the granting of membership in the 'Y'.

Evening Meetings[1]

"The six evening meetings were given over a two weeks' period and are repeated five times each year. The average attendance at these meetings is about one hundred young men. The aim of the first meeting is to give the class a general philosophy of the working of

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1. For list of Evening lecturers and topics, see Appendix, p.12.

our present economic system, and the lecture is given by a professor of distribution. The purpose of the second lecture is to aid young men to discover their vocational and personal assets. The third lecture, given by a physician, points out the necessity for individuals to keep in trim physically as well as mentally during periods of unemployment. The fourth lecture, on 'How to Choose an Occupation', emphasizes the necessity of career planning. The fifth lecture, also given by a physician, aims to make clear the place and importance of personality traits in vocational adjustment, while the sixth and last of the evening meetings points out the various methods a young man should choose today in locating a job.

Afternoon Occupational Information Meetings[1]

"After a careful survey of the business, industrial and professional field of workers, a group of a dozen or so men were selected to lead the afternoon occupational information meetings. The men were selected as leaders not alone on the basis of success in their particular field of work, but mainly because of their teaching attributes. These meetings are conducted very informally with an average attendance of between twenty and thirty young men. (I should note

1. For list of speakers and topics, see Appendix, p. 12.

here that attendance at the evening meetings is more or less compulsory, whereas individuals elect those occupational information groups which they desire to attend.) Naturally in some cases young men attend all meetings whereas in other cases where vocational interests are fairly well defined the young men narrow their selections. Each of these meetings is one hour in length. The speaker, as a rule, takes some thirty minutes for presentation of his subject and the meeting is then thrown open for questions.

"..... As a means of aiding the members of the group to analyze themselves as to vocational and other assets and liabilities, the following battery of tests[1] are used:

[2]Otis Self-Administering Tests of Mental Ability;
Higher Examination: Form A

Johnson O'Connor Aptitude Tests for
Clerical Aptitude
Mechanical Aptitude
Finger Dexterity
Small Tool Ability

[3]Allport A-S Reaction Study

Strong Vocational Interest Blank

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1. For detailed description of the tests, see Chapter III.

2. Following the group here studied, the Otis test was superceded by the Revised Alpha Examination Form 5.

3. Following our group, the Beckman Revision of the Allport A-S Reaction Study has been used.

"The above battery of tests are given individually and in groups. Members of the various groups volunteer for clerical work thus making possible the correcting and scoring of a rather large number of tests.

"At the conclusion of each of the job counseling projects, all the material gathered about the individual member is placed in an envelope and sent to members of the counseling group. Such material has to do with statements by the young men as to their educational and vocational experience, their interests, together with the results obtained on the various tests. The work of the counselor is many sided. He not only aims to aid the individual in thinking more clearly about his own assets and liabilities in the light of present economic and social conditions. He has, too, the job of aiding the young man to restore lowered morale to an adequate point. As a further task, he has the opportunity to restore to the individual a revived sense of social and vocational acceptability.

"The group of counselors, numbering about sixty, were carefully selected on the basis of intelligent, sympathetic attitudes toward the difficulties which confront the young men. Before beginning the active work of counseling with young men, each member of the counseling

group completed a training program covering the following elements:

(1) Explanation of job counseling program as to need, development and function

(2) Qualifications of counselors

(3) Theory or testing devices

(4) Explanation of all tests used and opportunity to take some

(5) Interpretation of test results

(6) Group counseling technique

(7) Individual interview technique

(8) Sources of occupational information

(9) Reading and references on counseling

"To each counselor, during the year, are referred eight to ten young men.....

"It might be of interest in visualizing the project to draw a composite picture of the median man of one of the groups. He is twenty-four years old and unmarried, with a record of having completed one year of college work. He is of superior intelligence, having a percentile rating of ninety-five[1], but he has been out of work between seven and twelve months. His ranking

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1. Note that Mr. Riley's median is based upon scores from the Revised Alpha (see footnote p.11). This would indicate an IQ of 113. In the Otis test used in our study, scores were translated immediately into IQ. For comparison with our study-group see pp.65-69.

on the Allport Ascendence-Submission scale shows that he is of a submissive type and probably would fit much better into a place where he could work with things and ideas, rather than with people. He probably would be temperamentally unfitted for sales work, law, politics, or positions where he would have the task of organizing or supervising men. His interests are not conclusively either like or unlike the interests of successful men in the vocation he would like to enter, but his interests are slightly more mature than those of the average man of his age. All in all, the median man of the job counseling service is distinctly a worth-while man to work with -- he is superior to the average in education and intelligence, and not inferior in maturity of interests. He is, however, decidedly maladjusted vocationally, and, being submissive, of a type that needs psychometric work to discover and show him his aptitudes, advice and direction to help orient himself and to hearten him, and guidance and counseling to help him make the proper vocational adjustment. It is doubtful if such work will fail to pay ample dividends.

"The project is now entering upon its third year of service. A great many of the men who have enrolled during the past few years have found work. Many have

returned to school or have undertaken further educational work in addition to their daily work. A great many of the young men have acquired a new sense of their own abilities and work opportunities and have changed from seemingly unwanted members of the community to socially and vocationally accepted individuals with possibility of continued growth."

Comparisons with other Similar Services.-- To compare this service with similar projects, such as those in New York, under the Carnegie Foundation, the Minnesota Unemployment Research Project, and the many guidance systems conducted by public schools in various parts of the country would give us no special help in our present problem. One point, however, is significant: That in the enormous,one-year experiment in New York City, which lasted from February, 1933, to May, 1934, there was spent some $224,000, and there were about 120 paid employees. In the service of the Boston "Y" the only paid personnel consisted of Mr. Riley, the Director, Mr. Herbert Saul, assistant to the Director, a secretary, and about half the time of another man. The total expenditures in any one year did not exceed $7,000.

When this sum is considered against the total of 1500 young men who have received the benefits of the service during the past three years, it is readily seen that the Job Counseling Service is laboring under a severe handicap at the start. Under such conditions it is almost certain that short-comings will appear. Wherever possible, recommendations will be made to strengthen the service, and to give an impetus to the collection of funds to make the service more valuable, and available to more men.

CHAPTER III

COLLECTION OF DATA USED BY COUNSELORS

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COLLECTION OF DATA USED BY COUNSELORS

In order to make the work of the individual counselor as valuable as possible, certain data is collected which is expected to give, quite fully, the aptitude-ability pattern of the counselee.

First, when he registers, he makes out a case history blank[1] which gives a brief outline of his life history, including work and education.

Second, he goes through the battery of tests, the results of which are sent, with the case history, to the counselor.

Third, in converation with the counselor, the counselee fills in any further information that may be needed to give a clear picture of his character, his failures and successes, his hopes, ambitions and fears, his points of strength and weakness, and other matters of experience and environment which tend to make him what he is.

A glance at the brief case history blank gives the impression that nearly the entire burden of discovering the true nature of the counselee is left either

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1. See Appendix, p. 13.

to the tests or to the counselor. This would seem in indicate that either the Job Counseling Service depends almost wholly upon test results as a final index of a young man's vocational fitness, or upon the ability of the counselor to ferret out the information needed.

As a matter of fact, those responsible for the conduct of the service do not personally place too much emphasis u pon the reliability of the tests, except as constituting a battery of investigating instruments which gauge to a fairly accurate degree the ability and aptitude of the individual. But they are not infallible. They serve as guide posts, merely, to point towards the broad vocational classification into which the young man may fit successfully, but they stop far short of determining the exact job which he must, because of his nature, expect to hold.

It does not seem to be the province of this study to determine whether these are the best tests that might be used, or to suggest a new battery as being probably better for the task expected of them. They have been selected with care. They appear to have functioned well in specific cases. They are being scrutinized all the time in the hope of bettering the service by improving the battery of tests. Until more accurate methods

of measuring are found, they will serve as a valuable part of the data which the counselor uses to size up the counselee.

Yet there is an element lacking that I am sure should be injected into the service before the tests are given. That is, to substitute for the present brief case history blank a complete study such as the 8-page self-analysis blank used by the University of Minnesota Research Institute. In such a case history we should be able to find much of the family history and background, the early and present environment, the likes and dislikes, the impulses, hobbies, interests, ambitions, characteristics and attitudes, and many other personal points about the counselee which can only be gotten at by his writing them down in answer to specific questions. The tests will not show them. Conversation with the counselor will only touch the fringe of the counselee's experience unless the counselor has before him the complete life history of the young man.

Such a blank can be worked out satisfactorily, and will prove a valuable aid to the counselor and to the counselee as well. In no way can the young man come to know himself so well as by writing analytically about himself and his past life.

Then when he comes to the counselor, the latter will be conversant with the young man's history as well as with the test results, the composite of all this data supplying the foundation for intelligent and effective counseling.

Description of the Tests.-- For those who have not used the psychometric tests comprising the Job Counseling Service battery, I shall describe in some detail each of the tests, the methods of use, and the particular object for which the test was designed. In doing this I am, generally, taking the point of view, as nearly as I can determine it, of the originator of the test. It should be borne in mind, therefore, that the object of the Job Counseling Service is to secure a clearly-defined picture of the person examined, and yet that the test results are never to be taken as a final index of vocational fitness.

Otis Self-Administering Tests of Mental Ability[1].
Higher Examination: Form A
For High Schools and Colleges

The test says: "This is a test to see how well you can think." Practically all the 75 questions are tests of ability to think in terms of word relations. It tests ability to follow directions, or to think in

1. For Otis Test, see Appendix, p. 15
See also MANUAL OF DIRECTIONS AND KEY for Otis Test, "Scope", p. 1, in Appendix, pp. 19-30.

the same way one is called upon to exercise mental effort in school tasks. The test would reflect with considerable accuracy one's ability to learn the basic studies in any school or college course, though, of course, it does not reflect specific abilities.

One of the chief difficulties with any test of this kind is the question of the validity of the IQ's secured for adults. This Otis test is designed primarily "for high school students and college freshmen"[1]. There has so far been little effort made to secure valid IQ's above 17 years of age. Mr. Otis has worked out a method of measuring IQ's for 18 years and above by adding the plus or minus difference between the individual's score on the Otis test and 42, to 100[2]. This represents the norm for individuals over 18 years of age. Hence a man of 40 with an Otis score of 62 would have an IQ of 100 plus (62-42) 20, or 120.

Our difficulty is that our group represents ages from 18 to 54[3]. While we shall take the IQ's as Otis has directed, still we cannot but feel that sometime a more valid method of computing IQ's for adults must be perfected. For it seems quite absurd to have a different

1. Otis MANUAL, op. cit., "Scope", p.1; appendix pp.19-30.
2. Ibid., p. 6
3. In early groups the age limit of 35 was not always adhered to.

age norm for each age under 17, and then to bunch all ages of 18 and over under one norm. Otis says[1]: "The term 'mental ability' refers to that innate mental quality which increases with age".... which would seem to admit a need for a measuring instrument that is not limited by the age of the one tested.

In the IQ SCALES[2] "A Refinement in Finding IQ's" we read: "It will be noted that the method of figuring IQ's as provided in the Manual is such that the highest IQ obtainable by a pupil of 17 years 6 months or over in the Higher Examination is 133, whereas much higher IQ's than this can be obtained by pupils of lower ages. This is because the distribution of IQ's of adults by the Higher Examination is skewed. When the skewness of this distribution of IQ's has been corrected by statistical means, it is found that the IQ of a pupil of 17 years 6 months or over who has made a score of 75 should be 144, and there should be a corresponding increase in theIQ's of such pupils making scores above 67."

In the case of our study group, 13 had Otis scores of 68-73. If we take into account the matter of skewness mentioned above, and compute IQ's with great care we find

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1. Otis MANUAL, op. cit., p. 3: "Interpretation of Results"

2. IQ SCALES, Appendix p. 35.

a few higher scores than were reported by the Job Counseling Service. While this would tend to raise the median IQ of the group, it would not, however, throw our calculations sufficiently out of line to make any marked difference in the final tabulations.

Through the Otis Test we secure a fair estimate of the ability of the individual tested to follow directions and to think under conditions somewhat approximating ordinary school study. Our next desire is to secure a picture of the various abilities or aptitudes he exhibits with relation to different kinds of work, our hope being that we may be able to discover certain mental elements in his make-up that will make him more adaptable for work under one set of conditions than under another. More specifically, we want to determine whether or not he comes normally under the general classification of "clerical", "mechanical", "professional", "administrative", and then see if we can narrow down the classification still further to make his choice of vocation as effective as human skill can accomplish.

In selecting tests for this purpose, the Job Counseling Service chose four devised by Johnson O'Connor primarily for use in selecting employees for the General Electric Company's plant in West Lynn, Massachusetts.

The first of these special aptitude tests is one which should help in selecting men for almost any clerical or office job, for banking, and for accounting. It is the

Clerical Aptitude Test[1]

Mr. O'Connor says[2]: "Clerical aptitude -- a gift for grasping the significance of figures, fundamental to success in accounting, banking, and all clerical activities, including those involved in doing routine school work."

The instructions for taking the test are given by him[3] as follows: "We have made what we call a set of worksamples -- the experimenter scrupulously avoids the word test -- so that we can try a new person on an actual sample of the type of work he plans to do. One sample, for instance, represents clerical work; another, inspection; and another, mechanical work.

"We have attempted to make samples which measure, as nearly as possible, natural abilities and not training, because we wish, ultimately, to use them only with boys who come to us directly from school. Many now apply for work with no idea of what they sould like to do or for what they are fitted. We shall never be able to tell a

1. For Clerical Aptitude Test, see pp. 36-38, Appendix.
2. O'CONNOR, JOHNSON: "Psychometrics," p. 282, Harvard University Press, 1934
3. O'CONNOR, JOHNSON: "Born That Way," p. 80, The Williams & Wilkins Company, Baltimore, 1928

boy unquestionably that he will succeed in this or fail in that, but we can indicate to some extent inclinations toward mechanics or clerking or executive work."

This last paragraph reflects exactly the attitude in which the Job Counseling Service takes up the problem of each man who comes to it for help and guidance. Mr. O'Connor shows that this Clerical Aptitude Worksample does measure a raw mental element, so to speak, which is supported by the fact that college students and graduates who later become highly successful in accounting will, without training, pass this test with as high a rating as the most highly successful accountant, while graduates who rate "D" on the test invariably fail to make good for any length of service.[1]

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1. "Born That Way," op. cit., pp. 147-151

Mechanical Aptitude

For measuring this mental element the Job Counseling Service utilizes the O'Connor Wiggly Block.[1] "It consists of nine irregular pieces which, when fitted together, form a solid block." Roughly, the block is about a foot long, and perhaps nine inches square at the ends. It presents the same problem as a Chinese, or jigsaw puzzle. From repeated tests with the Wiggly Block it is evident that it measures a certain natural aptitude for mechanical, engineering or designing work, and that those who prosper in such occupations rank high in their ability to assemble the block rapidly -- usually in well under six minutes. The opposite is also true, that those who are slow in assembling the block rarely make good in mechanical or engineering work.

O'Connor defines this mental element as follows[2]: "Engineering aptitude -- a gift for visualizing three-dimension structure, fundamental to success in engineering, architecture, surgery, and the higher types of mechanical work."

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1. "Born That Way," op. cit., pp. 28-33, 209
2. "Psychometrics," op. cit., p. 282

Finger Dexterity

"For some odd reason (this) has practically no relation to tweezer dexterity. The ability to use one's fingers seems to be quite distinct from the ability to use a small tool such as a pair of tweezers."[1]

This test[2] is given by means of a metal plate 7/8 inch in thickness, 5¾ inches wide, by 12 inches long; with 100 holes, arranged in ten lines of ten each, 1/2 inch apart both ways, depth of holes, 3/4 inch, diameter of holes, 0.196 inch. There are 310 brass pins, one inch in length and 0.072 inch in diameter (ten extra in case some are dropped). Three pins are picked up at a time, using only one hand, and placed three in each hole. The times for those who are excellent in this test would not run above 4.4 minutes. Interestingly, women rank faster on finger dexterity, men on tweezer ability.

"Some types of work have come to be recognized as pre-eminently belonging to women. Miniature instrument assembly, the fabricating of delicate electrical instruments, is one of these tasks."[3] Still there are many

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1. "Psychometrics," op. cit., p. 282
2. "Born That Way," op. cit., p. 213
3. Ibid., p. 142

tasks requiring finger dexterity that are occupied by both men and women, and some perhaps by men alone. The manipulation of a comptometer, a billing machine, a typewriter, a linotype or a monotype machine, manufacture and assembly of certain finer parts of an automobile or aeroplane, suggests the possibilities along this line.

Small Tool Ability -- or "Tweezer dexterity"[1]--

This is "the type possessed by surgeons and by miniature-instrument assemblers. Some investigators would not care to classify this as a mental element, but it is a characteristic which has no relation to the others."

For this test[2] use the same size metal plate as in the finger dexterity test, except that the holes are 0.082 inch in diameter, and there are 105 brass pins, same size as in the other test (five extra in case some are dropped); and a pair of tweezers, size 00. The idea is to pick up the pins, one at a time, with the tweezers, and place them in the 100 holes.

It is interesting to note that those who can do this in under six minutes[3] show a far greater aptitude

1. "Psychometrics," op. cit., p. 282
2. "Born That Way," op. cit., pp. 215-217
3. Ibid., pp. 56-59

for work requiring small machine assembly or dexterity with small tools than is the case with those who take a much longer time to accomplish the task. From repeated tests both with novices and with persons who have been working as skilled operators in jobs approximating this test, it has been found that the ability to handle the pins swiftly and deftly is apparently innate in the individual, not acquired from training. Hence the test is of real diagnostic value.

Men of Many Aptitudes.-- Thus far we have been thinking of aptitude tests as differentiating individuals one from another as their aptitudes and abilities tend to direct them into one or another kind of vocational activity. So, an "A" or a "B" man will be more succesful in the appropriate kind of work than a "C" or "D" man. Our real difficulty arises when we have a man who rates "A" or "B" on all four of the aptitude tests. In counseling, as is evident with many members of our study group, there is a serious problem in attempting to fit a man into one specific vocation, and to help him to become really satisfied with his work and his life prospects.

[1]"This man, so far as these particular measures are concerned, can do almost anything in which he is interested.

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1. "Born That Way," op. cit., pp. 203, 204

Yet, during the past few years, several brilliant boys have been followed who, because of their wide range of aptitudes, have wandered from one type of work to another. A man with many gifts is in constant danger of restless shifting. Choosing first perhaps clerical work, he soon realizes that he is employing only a part of himself, and changes, hoping to gain fuller satisfaction. In the new work he uses other abilities than before, but still only a portion of his complete personality, and again he moves.

[1] "The larger the number of gifts the greater should be the ultimate goal gained but, all too often, because of the uneasiness engendered by unemployed aptitudes, the gifted man, wasting year after years, ultimately ends as a failure.

"The highly endowed boy should not specialize too early, for the wider his training and the more inclusive his interests, the greater will be his ultimate achievement; and yet, as soon as possible, he should be given a goal for which to aim, and little by little helped to gather together the many threads of his life.

"The moment this boy reaches sufficient maturity to take his life in his own hands he should consciously plan it, fix his own objective and persistently strive

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1. "Born That Way," op. cit., pp. 203,204

toward it. This does not mean that such a one must continue at the same monotonous task for fear of change. On the contrary he should consciously grasp every opportunity which presents itself to extend his experience. But in so doing and at every new turn he must answer the question, 'Will this opportunity advance me toward my goal; or is mere restlessness alluring me?' and in so far as he answers correctly, he will succeed."

In connection with our study, two things stand out clearly, as regards men with uniformly high aptitude ratings:

(1) These men require unusually well-balanced and thoughtful counseling. A study of Mr. O'Connor's book ("Born That Way") makes one realize the vast importance of counseling and the dangers that exist where counselors are not fully trained nor entirely sure of what the work means.

(2) There are in every one urges[1] -- half-submerged desires -- instincts -- call them what you will, that make us want to be and to do certain things. One boy wants to be a cowboy, not because any of his folks were cowboys before him, nor because anybody has urged him to take up such a career. Perhaps he cannot even tell from

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1. As an illustration, see WILKINSON, RICHARD HILL: "Eyeritis," The Boston Herald, April 13, 1935; Appendix, p.39.

what prompting the urge sprang nor why it persists. Yet there it is, dogging his footsteps, making him restless, urging him to leave everything that he now knows and that his family holds dear, and pioneer on his great Quest.

Sometimes the daydreams of childhood uncover fundamental urges which persist throughout life. Usually these daydreams are wiped away by the realities of life, by economic pressure, or by the dictum or the ridicule of parents, teachers or misguided friends. Occasionally they spur the youngster into following his "star" -- his urge -- through trouble, hardship, privation, often into glorious success.

How to take advantage of these fundamental emotional urges is an element of counseling and of guidance not yet fully developed, scarcely hinted at in any of the works on the subject. It is something, however, that we must recognize if we are to help our young people to the unfolding of their greatest powers for achievement and for happiness. Especially is this true in the cases of those more gifted young men and women whose ratings are so uniformly high that it is extremely difficult to place them in any job big enough to tax their powers of accomplishment. If, along with the aptitude ratings, we could take

advantage also of the inner urge than can so often be found just waiting its opportunity to bob up, how much greater might our own success as counselors become.

This further study, however, has no place in this thesis, and is recommended as one of the most promising studies that can possibly be made in the realm of "Human Engineering", to quote Mr. O'Connor's apt phrase.

Allport A-S Reaction Study[1,2]

Symonds[3] says in relation to this test: "The tendency to dominate or submit to others is another characteristic which may yield to attack by the questionnaire self-rating method. A priori it appears that any individual has enough consistency in his behavoir in various situations with regard to his dominance or shyness to make it worth while to attempt to measure it. G. W. Allport, together with F. H. Allport, studied the problem, assembled a series of situations in which persons exhibited ascendant or submissive behavoir, and finally constructed questions by means of which a person could rate himself on this trait.....

"The authors of the test point out its possible usefulness in personal counseling, educational and voca-

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1. For Allport A-S Reaction Study see pp. 40 and fol.
2. For Allport Manual of Directions, see Appendix, pp.41 & fol.
3. SYMONDS, PERCIVAL M: "Diagnosing Personality and Conduct," pp. 205-209, The Century Co., 1931

tional guidance, and vocational placement. The suggestion is made that possibly the questionnaire measures one factor in leadership."

To illustrate the usefulness of this reaction study;[1] "In a study of executives in a large chain organization it was found that 87 executives had a median score of 10 (A-2)[2]; ..... 20 general managers in the same organization showed a median of 21 (A-4). In connection with the civil service of Cincinnati, it was found that 29 department heads and bureau chiefs had an average score of 17.1 (A-3); whereas 31 water-meter readers averaged -0.9 (Average). In another group of 52 men selected for training in salesmanship, a mean score of 13.9 (A-2) was found. A group of 85 Y.M.C.A. secretaries was found to show a median score of 12 (A-2). In a merchandising organization ..... it was found that of all the executives who left the company's service in the course of a year only one-fourth showed positive scores as compared with three-fourths who had scored negatively, thus suggesting that those with submissive traits could not succeed with the organization in question.....

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1. Allport Manual, op. cit., p. 7
2. For A-S Reaction averages of our study group, see p. 62

"Men with submissive scores, other traits being favorable, may logically be adapted for the fine arts or architecture, design, farming, bookkeeping, banking, dentistry, writing and editing, music, secretarial work, chemistry or other laboratory research, mechanics, etc. Those who are ascendant would appear to have a special advantage in supervisory or executive work (particularly along commercial rather than industrial lines), salesmanship, law, politics, organizing, and kindred work."

It is certain that one with a negative score may make a success even of selling, if all other factors in his personal makeup tend in that direction. Yet, it seems also rather certain that a man with a positive rating stands a better chance of battling with the world so far as hustling for a job is concerned. The "S", or negative, score man will be equally as good a worker, equally as useful in the world, yet he will be somewhat more likely to work apart from the hurly-burly and rush of the stream of business, to find himself more retiring and less able to compete for a job than his more positively-minded brother. So we find in the Job Counseling Service, as the depression has continued, an intensifying of the "S" average of the groups or counselees. This may be due to the fact that the Ascendant group are the

first to become employed, leaving more and more the Submissive men in need of counsel and guidance. This suggests that there is an environmental factor in a man's A-S reaction. Allport stresses this[1] in an example of a group of 500 students in which "the twenty-five most extreme cases of ascendance and submission" were issolated, and "it was discovered that with intensive personal work for a period of approximately six months, striking changes in these traits could be produced. Success was more marked for submissive than for ascendant subjects, and more rapidly achieved when the environmental factors operative in building up the traits were ascertainable."

While this test seems to be significant in determining a man's qualities of leadership and his ability to cope with the difficulties of securing a job under unfavorable economic conditions, yet there is a grave danger in taking the A-S ratings as definite character indices. Symonds[2] says: "The question as to whether or not the test artificially creates by its very name and score a distinction which has no real esistence must be constantly borne in mind. It is quite possible that

1. Allport Manual, op. cit., p. 8, Appendix, p. 41.
2. "Diagnosing Personality and Conduct," op. cit., p. 207.

the tendency to dominate or submit is specific for each of the myriad social situations in which a person finds himself, and that the responses may actually bear little resemblance to one another. However, the very reliability of the questionnaire indicates an internal consistency of the items which is significant. It may be that this consistency simply reflects the consistency with which the person considers himself, as indicated by his replies to the questions, but even if this should be all it means, this fact would of itself be significant. However, the correlation with the ratings indicates that it corresponds to actual behavior characteristics which others can also observe."

So many factors of environment and of conscious effort enter into the question of a man's ascendency-submission rating that the test should be taken as indicating tendencies rather than definitely labeling a man as a leader or a follower.

Strong Vocational Interest Blank[1]

Having obtained by the other tests a fair picture of the aptitudes and attitudes of the counselee, the next step is to discover his interests, and to see if we can classify him roughly as belonging to one or another general vocational group. Allport attempts to make this classification by means of social attitudes while Strong makes his classification through a study of the interests of the individual.

He tells us[2]: "Men engaged in a particular occupation have been found to have a characteristic set of likes and dislikes which distinguish them from men following other professions. Scores on the Vocational Interest Blank are a measure of how nearly a man's interests coincide with those of the average man successfully engaged in a certain occupation.

"For the purposes of this test it is assumed that a man will be more effective in his vocational career if he is engaged in work that he likes than if he is forced to do a great many things that he dislikes. If he is given his own free will in the matter, it is apparent

1. For Vocational Interest Blank, see Appendix, pp. 42
2. STRONG, EDWARD K. Jr.: "Manual for Vocational Interest Blank," p. 1; see Appendix, p. 43. Stanford University Press, 1931.

from surveys made at Stanford University that his general interest will, to a surprising extent, influence his choice of a career."[1]

In the January, 1935, edition of his Manual, Mr. Strong lists 30 occupations for which he now has interest scores. He claims:[2] "In diagnosing a man's occupational interests the blank should be scored on all thirty scales, for in this way the interest pattern may be most clearly ascertained; this should be done with Hollerith equipment, as the labor of scoring all these scales by hand is excessive..... There are many cases, however, where a student is desirous of knowing which of two or at most three occupations he should enter; in such cases the blank may be scored for these few occupations at less cost by hand."

Lacking the Hollerith equipment, the Job Counseling Service has made a practice of scoring every counselee on two (sometimes three) vocations. Occasionally a counselee has requested further scores which have been made. Even a cursory study of the consolidated data on

1. STRONG, E. K., Jr.: "Vocational Interest Test," The Educational Record, April, 1937; and also STRONG: "Diagnostic Value of the Vocational Interest Test," Ibid., Jan., 1929.
2. STRONG, E. K., Jr.: "Manual for Vocational Interest Blank for Men," p. 3. Stanford University Press, January, 1935.

our 105 counselees[1] makes it rather evident that there are very many cases in which the rating has been made upon occupations in which the men had really little if any interest. This would seem to carry out Strong's assertion that all 30 vocations should be scored for most counselees. Yet it must be evident to any one who has done much personnel work and who has used the Strong blank that there is so much overlapping of interests in these various occupations (as listed on the back of the Interest Blank) that it would be futile to tell any boy: "You must be a minister, a lawyer, or a bricklayer" on the basis of the Strong test alone. From using the Strong Interest Blank with a considerable number of young men I have come to the conclusion that its scores point to the general vocational classification within which the one tested may hope for success, but by no means singles out the definite job for the individual.

Strong stresses the point that the test measures interests, and that a man is more likely to be successful if he is interested in his work. He says:[2] "The question, 'Does the individual have the interests

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1. See TABLE XV I, Appendix, pp. 1-8.
2. Strong Manual, 1935, op. cit., p. 8.

characteristic of a particular occupation?' is answered by three ratings: A(yes), B (not sure), and C (no)." Apparently a rating of B plus will be almost as certain in indicating interests as will a rating of A. We also find men with B ratings apparently making good in the vocation rated, though in many of these cases the men later change to other occupations which coincide better with their genuine interests and in which they are happier and more successful. Thus it would seem essential that enough scores were computed to find at least one or two occupations in which the young man will rate A or B plus.

This need not, however, require scoring all thirty of the occupations Strong has listed. He points out:[1] "As the thirty occupations may be classified into seven groups on the basis of interests, it is possible by scoring the blank for interest in seven occupations (each of which is fairly typical of a group) to ascertain a man's occupational interest with respect to these groups of occupations." Thus we may, by making sure of the ratings in the seven occupations determine the general classification within which the man's vocational interest lies. For instance, if he rates A on Minister, his interests, aptitudes and attitudes should also be canvassed for Teacher and Musician, since they lie in the same group.

1. 1935 Manual, op. cit, p. 3.

Obviously it is unfair to the counselees, if the Job Counseling Service is to continue using the Strong Test, to score them only on two random occupations in which they may have not the least interest and for which they evidently have little or not aptitude or training. Unless they show a decided interest in specific vocations, they should be scored on the seven key occupations, and then further occupations rated if deemed necessary. In other words, we should use the Strong Test to point the way towards appropriate vocational choices, backing up the test ratings with all other available information regarding the counselee.

Vocational Profile.-- From the foregoing it may be seen that the attempt at the Job Counseling Service is to diagnose the vocational traits of each counselee much as the skilful physician diagnoses one's symptoms of disease. As a result of the tests a "Vocational Profile," or picture, of the man vocationally, is prepared. This, added to the personal history data, gives the counselor a fairly clear picture of the man he is to counsel. A study of the "Profile" in connection with the individual answers to the various tests brings out evidence as to why the man was or was not

successful in his former occupation, as to why he is finding it difficult to adjust himself to present-day economic conditions, and as to what might be a reasonable line of attack for him to make in preparing for, or applying for work in any given vocation.

On the following pages are Vocational Profiles and case histories of two typical counselees, though not from our group of 105, which show clearly how the test results have been used as the basis of decisions which led to complete changes in the vocational lives of these two young men. In each of these cases, the tests results furnished the directional guides, linking up with past experience and with personal desires and interests. All these elements gave the counselor a sound basis for his advice which, in turn, helped the young men to set in motion hitherto unused energies leading towards success.

NAME J----- D----- DATE

VOCATIONAL PROFILE

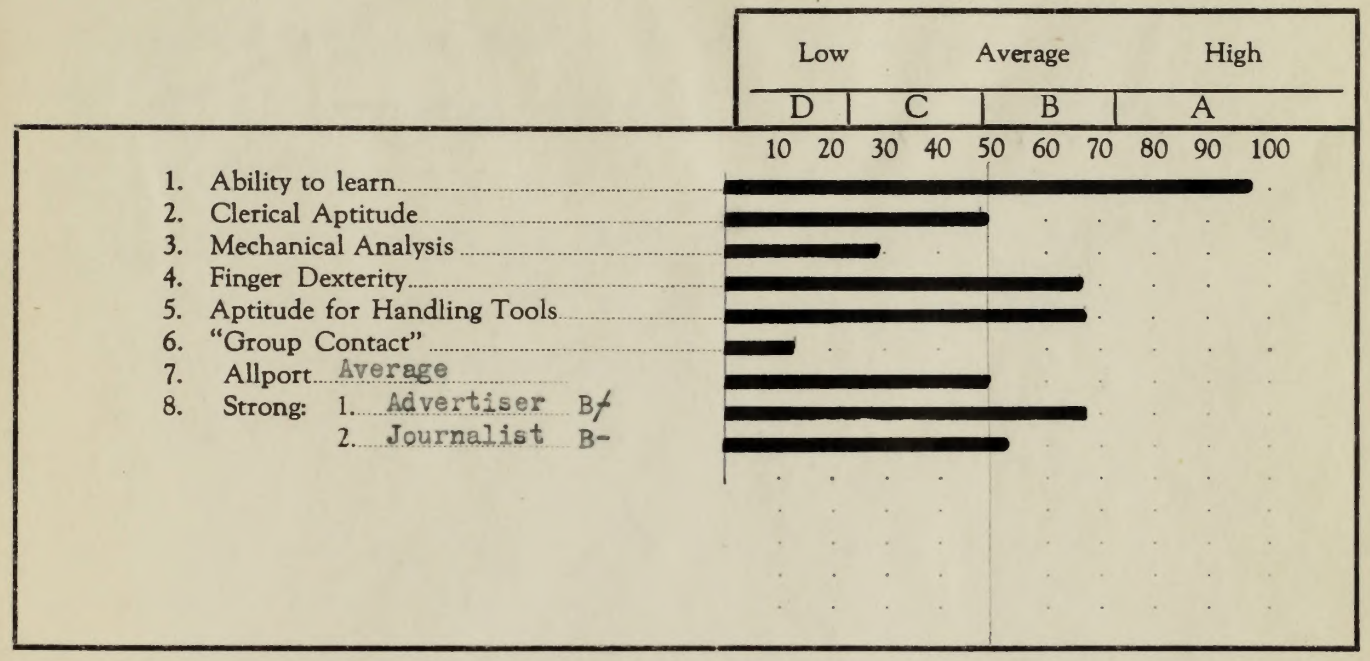

FIGURE 1

VOCATIONAL PROFILE WHICH CONFIRMED COUNSELEE IN HIS DESIRE TO ENTER ADVERTISING

A young man of twenty-one. He presents a more or less characteristic problem. He was urged by parents to complete a liberal arts college course in the face of his expressed desire to carry on a course of training having more to do with business and advertising. The result was a lack of interest and consequent failure in his third year at college. This was followed by continually increasing sense of inadequacy and unacceptability.

Psychometric results upheld the young man's desires to enter the advertising field. A visit from the young man shows him now at work in one of our largest department

stores, taking the training preliminary to entering the advertising department. In addition he has attended summer and evening courses in advertising at a local university.

A visit to his place of work elicits a report from his superior that he is the best young man they have had in the department.

NAME A----- B----- E----- DATE

VOCATIONAL PROFILE

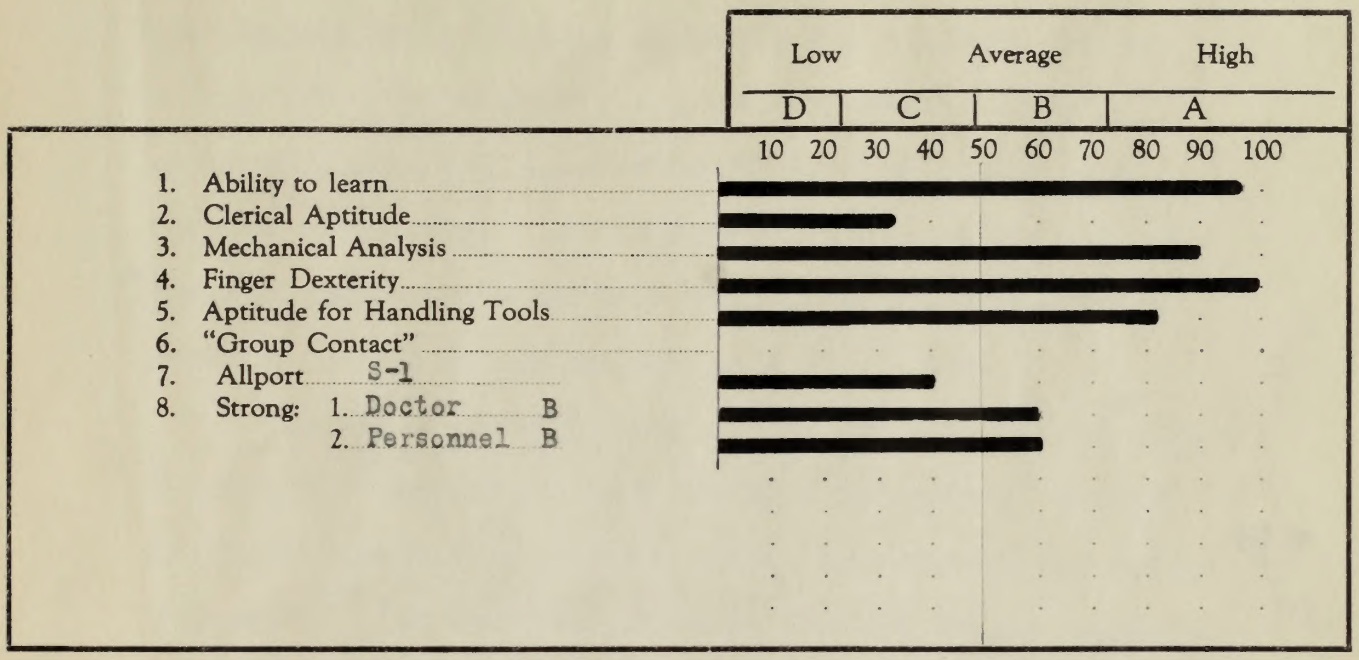

FIGURE 2

VOCATIONAL PROFILE WHICH HELPED TO GUIDE COUNSELEE INTO OPTOMETRY

A young man of twenty-six who had completed three years of work in one of the larger chain stores with the objective of store manager. Previous to that time, he had tried more or less successfully, selling of a specialty sort, mainly from house to house. There was also a history of some clerical work. At the time of his coming to the Job Counseling Service, he expressed a desire to continue in department store work leading toward work of an executive nature.

In appearance and with reference to personal characteristics and as a result of psychometric results, work having to do with people continually was contra-indicated.

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The psychometric ratings showed a low clerical score, a high ability to learn, a high mechanical-thinking score and high ratings having to do with finger and tweezer dexterity. A submissive rating on an Allport reaction test added further weight to the young man's eventual choice of optometry as a life work.

During a recent visit to the Job Counseling office, he reported that his school work in optometry, though difficult because of outside work, is progressing satisfactorily. He reported further that he is now employed on a part-time basis with an optometrist with a prospect of full-time work upon completion of his school work.

CHAPTER IV

METHODS AND OBJECTIVES

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As stated on page 4, our aim was to secure as complete a case history as possible of at least 100 counselees. On pages 4 and 5 we have showed how the 200 from which the 100 were to come were chosen, so that they might be as truly representative as possible of the entire 1500 young men who have gone through the course.

Questionnaire.[1]- Taking 200 names from the first three groups (end of 1932 and first of 1933), a questionnaire was sent to each young man with a request that he fill it out and return it to the Job Counseling office. From this we received 52 replies.

If this is done again, I suggest that the replies be directed to an outside party, and that a statement be inserted in the letter to the effect that no individual replies would ever be seen by Mr. Riley or his assistants. With this safeguard to the privacy of the replies, I believe a larger number would be received, and also that men who were dissatisfied with the service would feel free to reply.

Follow-up.-- A condensed form of the questionnaire[2] was

1. For Questionnaire see Appendix, p.45.
2. For follow-up see Appendix, p. 46.

then sent to 99 of those remaining, and 26 additional replies received. Telephone calls then increased the number by 25, while two more responded to a personal letter, making the total 105, enough to carry out the purpose of the study.

At this point a question would naturally be raised as to whether or not this 105 was truly representative of the entire 1500 counselees.

One hundred and five men out of 200 is a representative group, yet possibly not the representative group we should have secured. It is generally accepted in questionnaire procedure that, on the average, those questioned tend to make their replies conformto what they think the questioner expects. In that case, the replies are always, on the average, better, or more favorable to the questioner, than would be the case if the questioning were made entirely impersonal. We have found by questioning former counselees, both in the 105 group and out of it, that many of the best cases do not reply at all. They often drop in at the Job Counseling office and say: "I didn't send in that questionnaire because you know all about me anyway." Thus we have a reason for saying that, in many cases,

the results of the questionnaire would have been more favorable had we received a larger number of replies.

On the other hand, we have no right to assume that the usual conditions surrounding questionnaire replies is not operative in this case, and that, on the average, those who did not reply -- that is, the 95 men we did not hear from -- would not have tended to make our final results less favorable.

It is true that our group of 105 is nearly evenly divided into three groups with respect to the degree to which they benefited from the Job Counseling Course: thirty-six who benefited most; thirty-four who received at least an appreciable amount of benefit; and thirty-five who benefited but little, including thirteen who were openly dissatisfied with the service.

In Chapter V we compare the medians of our 105 group, as to age, intelligence, assendency-submission tendencies and amount of education with the medians of two other groups of counselees, showing that, in general respects, our group of 105 is representative of the entire 1500. Yet a careful survey of the 105 replies shows the following pertinent facts bearing on the reliability of the replies:

TABLE I

IMPORTANT DIFFERENCES IN THE REPLIES OF FOUR GROUPS OF COUNSELEES CLASSIFIED ACCORDING TO MODE OF REPLYING

Mode of Replying	Number Replying	Took More Education Since Course		Have Worked Since Taking Course		Were Working at Time of This Study	
		Number	Per Cent	Number	Per Cent	Number	Per Cent
Questionnaire	52	33	60	48	92	45	86
Card	26	9	35	25	96	21	80
Phone Call	25	9	36	24	96	19	72
Letter	2	1	50	2	100	2	100

TABLE II

NUMBERS AND PERCENTAGES OF RESPONDENTS USING EACH MODE OF REPLY, WHO REPORTED IMPROVED MORALE OR DISSATISFACTION WITH THE SERVICE

Mode of Replying	Number Replying	Dissatisfaction with the Service		Improved Morale as Result of the Service	
		Number	Per Cent	Number	Per Cent
Questionnaire	52	4	8	46	90
Card	26	5	20	16	60
Phone Call	25	4	16	12	50
Letter	2			2	100

Boston University
School of Education
Library

In studying this table, it should be borne in mind that our questioning took this order:

Sending of the questionnaire to be filled out and signed by the counselees.

Follow up with card questionnaire to 99 who did not reply.

Follow up with phone call where counselees had phones and were within a reasonable distance. This was done largely to those who had failed to respond wither to the questionnaire or the card.

Follow up with a personal letter to a dozen who did not otherwise reply.

Even a cursory glance at Tables I and II indicates that the best type of replies came from the questionnaire, indicating either (or both) that:

The ones most benefited from the course replied most readily; or that

Those who did reply first tended to give the most favorable replies.

Among those who replied to the card follow up, we find the largest percentage of those openly dissatisfied, as well as a considerable decrease in percentage of gain from the course in morale building,

in motivation towards more study, and in number still working at the time of this study, two years after taking the Job Counseling course.

Progressing to those who required a still further follow up by phone, we find the replies indicating a still weaker condition. Many of this group, although expressing gratitude for what had been done for them, still showed a great amount of indifference towards exerting themselves either to help us with this study (though its results might help other men in like circumstances) or to help themselves toward vocational success. This left the impression that the service might have fallen short both in the nature and amount of individual counseling given the counselees, and in following them up for a sufficient time to stir them to action.

Perhaps some might say: "Why bother to help those who won't help themselves?" The answer, perhaps, is contained in the fact, shown in Chapter V, that, on the average, these were worth while young men who had gotten off to a bad start. For the good of society as a whole they should, if possible, be set on the right track, and helped to lead useful lives.

That the two who replied to the final letter were both favorable is not convincing when we consider that ten others who received the letter did not reply at all.

Therefore, it is perfectly fair to conclude that, while our group is typical of the entire 1500 so far as their medians as given in Chapter V are concerned, yet so far as the results of this study are concerned, we must take all the findings given in the Summary[1]-- while true of the 105 counselees -- as being at least somewhat too optimistic for the entire 1500.

That the Job Counseling Course has benefited the counselees, on the average of those who replied, is well evidenced; that it has proved a turning point from discouragement to hope in the lives of a large proportion of them is certain from the personal notes appended to the questionnaires[2], yet it is fair to assume that the percentages given in Table XV[3] are indicative of the benefits derived from the Job Counseling Course rather than absolute figures which may be applied definitely to the entire 1500 counselees.

Control Group.-- A suggestion has been made that the best method of truly testing the effectiveness of the Job Counseling Service would be to take a similar group of 105 unemployed men, as of December, 1932, and follow their job-hunting activities during the past two years, to see how their success differed, if at all, from that

of our 105 group.

At first glance this seems like a wise suggestion. It would give us the length of time out of work, the ability to secure work and to hold it, and the question of whether or not a better job was secured and whether more education was undertaken. It would show, too, whether or not the morale of the control group had improved during the two years. A comparison of these results in the two groups would then indicate whether or not the Job Counseling Service was successful.

While agreeing in principle with this procedure, yet, obviously, it is not feasible in connection with this study. It would require more time than is now available to secure 105 "similar" men in respect to age, intelligence, amount of education, work experience, and ascendant-submissive tendencies. However, I firmly believe the results of such a study would be exceedingly illuminating and valuable to the service.

Original Tests and Data.-- Our next step, after securing all available data from the Questionnaires and follow up material, was to go back to the original battery of tests, the information given by counselees on their case history blanks, and the counselors' reports as made out two years ago. All the information available on each of the 105 men was compiled, tabulated and translated for comparative purposes.

Some of the specific points we aimed to determine were the medians of the counselees with respect to age, intelligence quotients, amount of education, and ascendency-submission reactions.

We wished to know the kinds of work done both before and after the course and its relationship to test results; also the amount of money the counselees were in the habit of earning before the course, and if unemployed at the time of taking the course, for how long a period.

Education attempted since the course, and its relationship to test results, is also of interest.

It is possible also that significant data may be arrived at in relation to age, intelligence quotients, Ascendency-submission reactions, or vocational interest scores as affecting vocational selections, ability to

secure work, and the question of whether or not further education was attempted.

Groupings of counselees by degree of benefit from the course will also be made.

All this data, analyzed in the light of this study, and with due allowance for such shortcomings as have already been pointed out, will tend to show whether or not the Job Counseling Service has been successful in reaching its objectives.[1]

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1. For objectives and results, see Chapter VIII.

CHAPTER V

THE MEDIAN MAN

CHAPTER V

THE MEDIAN MAN

In this chapter is given the data secured from the original battery of tests and from the case histories of our group of 105 counselees, to indicate the nature of the group by the characteristics of its median man.

Part of this data is compared with like data on two other groups of counselees to indicate the close similarity of our study group with others groups, to help in establishing the fact that our group of 105 is representative, at least in certain specific characteristics, of the entire 1500 counselees who have gone through the Job Counseling Service since its inception late in 1932.

CHAPTER V

THE MEDIAN MAN

TABLE III

DISTRIBUTION OF COUNSELEES WITH RESPECT TO AGE*

Ages	Frequency	Ages	Frequency
54-56	1	33-35	11
51-53	0	30-32	10
48-50	3	27-29	13
45-47	1	24-26	18
42-44	3	21-23	22
39-41	3	18-20	13
36-38	4		
Sub-Total	15		
Total			102

*Based on ages of 102 counselees, ranging from 18 to 54 years, with a median of 27 years.

TABLE IV

DISTRIBUTION OF COUNSELEES WITH RESPECT TO INTELLIGENCE QUOTIENTS*

Intelligence Quotients	Frequency
130 - 134	2
125 - 129	13
120 - 124	13
115 - 119	11
110 - 114	16
105 - 109	11
100 - 104	17
95 - 99	8
90 - 94	6
85 - 89	3
80 - 84	1
Total	101

*Based on 101 ratings on the Otis Test, ranging from 80 to 131, with a median of 112.

TABLE V

DISTRIBUTION OF COUNSELEES WITH RESPECT TO AMOUNT OF PRIOR EDUCATION*

Years of Education Completed (Ninth Grade taken as Number 1)		Frequency
College Post Graduate:	10	5
College Graduate:	9	32
Third Year College:	8	4
Second Year College:	7	12
One Year College:	6	11
High School Graduate:	5	28
Three Years High School:	4	2
Two Years High School:	3	6
One Year High School:	2	1
Ninth Grade Completed:	1	2
Total		103

*Based on records of 103 counselees, ranging in length of education from the 9th grade to post graduate college work, the median being one year of college completed.

TABLE VI

DISTRIBUTION OF COUNSELEES WITH RESPECT TO ASCENDENCY-SUBMISSION RATINGS*

Ascendency-Submission Ratings	Frequency
A - 4	8
A - 3	6
A - 2	6
A - 1	8
Average	25
S - 1	12
S - 2	7
S - 3	13
S - 4	17
Total	102

*Based on 102 ratings on Allport Ascendency-Submission Reaction Study, showing a median for the 102 counselees of -Average.

TABLE VII

DISTRIBUTION OF COUNSELEES BY NUMBER OF MONTHS UNEMPLOYED PRIOR TO TAKING JOB COUNSELING COURSE*

Months Unemployed just Prior to Course	Frequency
45 - 49	1
40 - 44	1
35 - 39	0
30 - 34	1
25 - 29	1
20 - 24	5
15 - 19	5
10 - 14	15
5 - 9	10
0 - 4	27
Total	66

*Based on records of 66 counselees who had been out of work from three days to 48 months at the time of taking the course, the median being eight months unemployed. We have definite records of only twenty being employed at time of taking the course.

TABLE VIII

DISTRIBUTION OF COUNSELEES BY WEEKLY SALARIES EARNED PRIOR TO TAKING JOB COUNSELING COURSE*

Top Weekly Salaries	Frequency	Top Weekly Salaries	Frequency
$110 - 119	1	$50 - 59	6
100 - 109	0	40 - 49	2
90 - 99	1	30 - 39	20
80 - 89	1	20 - 29	17
70 - 79	3	10 - 19	17
60 - 69	4	0 - 9	1
Sub Total ...	10		
Total			73

*Based on records of 73 counselees whose top salaries prior to taking the Job Counseling Course ranged from $6.50 to $115.40 a week, the median being $31.25 a week.

SUMMARY OF MEDIAN RESULTS

Here is a composite picture of the median man of our group of 105 counselees:[1]

He is 27 years of age; has an intelligence quotient of 112; has completed one year of college work, and has an ascendency-submission rating of -Average. He had worked prior to taking the Job Counseling Course, although he had been out of work eight months just prior to enrolling in the course. His top pay on former jobs had averaged $31.25.

From this data it will be seen that our group was made up of a superior type of young men, a "white collar" group -- men who were well worth helping. Their ascendency-submission median rating of -Average, and the distribution of ratings on Table VI being so largely on the submissive side probably points to one of the main reasons for the difficulty which these young men have experienced in securing appropriate jobs, and in holding jobs through the depression.

On the following pages we give a comparison of this group with two other groups, to indicate how closely all the counselees of the Job Counseling Service resemble one another.

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1. cf. Mr. Riley's median man, pp. 13, 14 sup.

COMPARISON WITH FORMER STUDY

In 1934 a study was made of a group of some eighty counselees that went through the service at the end of 1933, to determine the median ratings of this group. A comparison of this group with respect to its distribution according to ages, years of education, intelligence quotient, and ascendency-submission ratings with the entire 1932-1933 groups of between 400 and 500 was then made.

In the following figures I have compared these two distributions with similar data from my group of 105 counselees to show how closely alike in specific characteristics all the counselees have been throughout the years the service has been in operation.

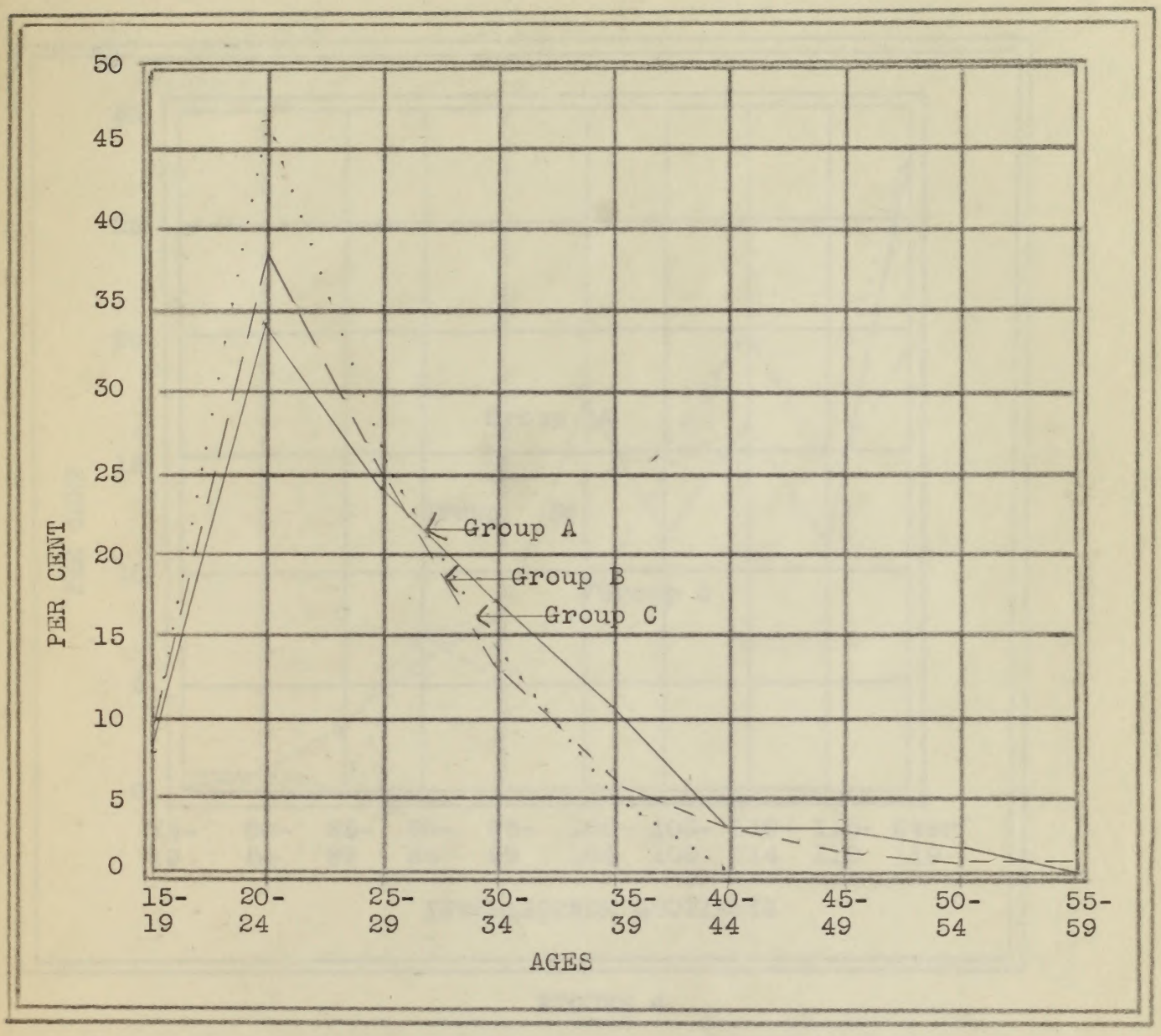
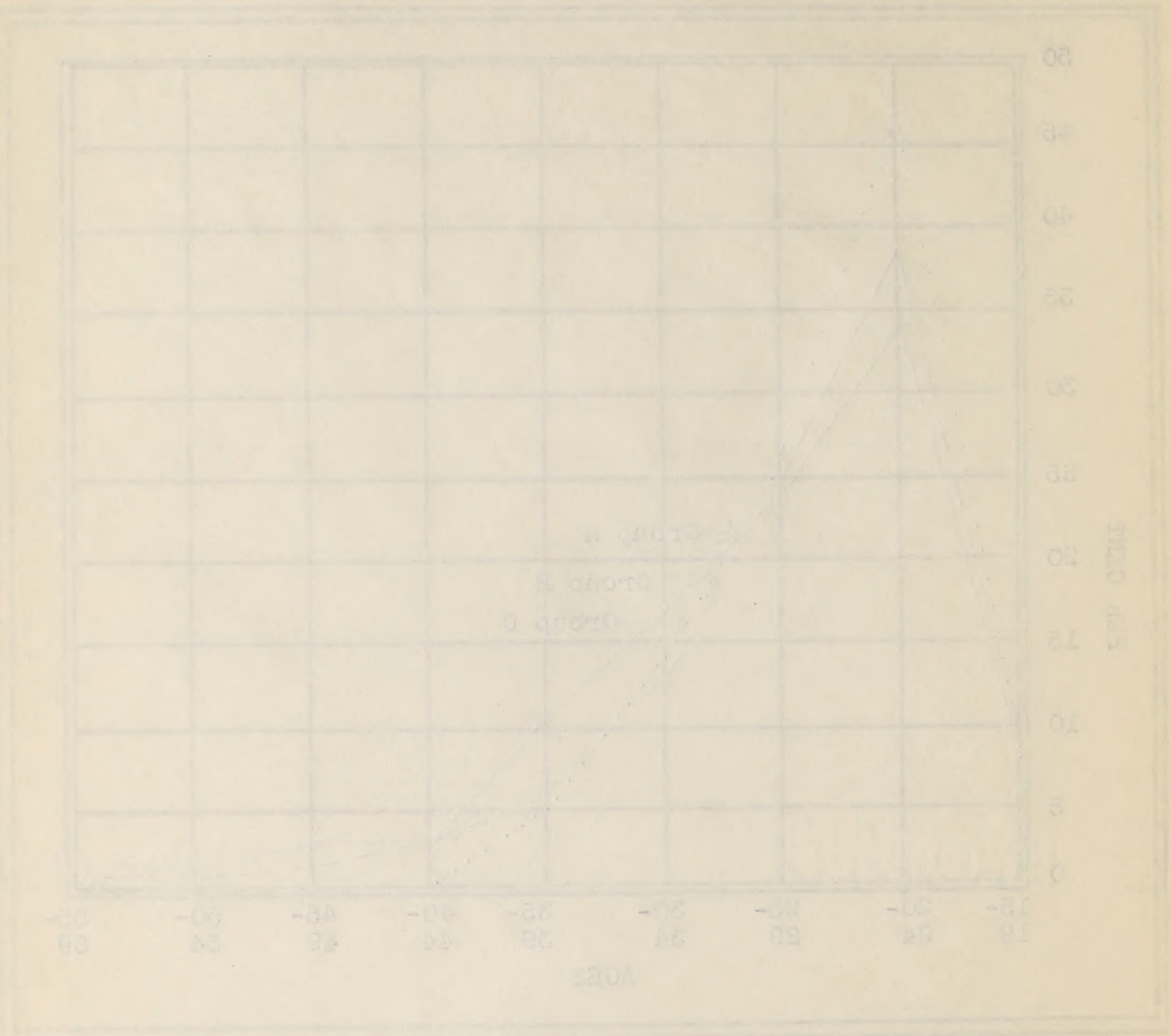


FIGURE 3

PERCENTAGE OF COUNSELEES IN EACH OF THREE AGE GROUPINGS

Group A: 105 Counselees
Group B: 486 Counselees, 1932-1933
Group C: 80 Counselees, 1933-1934



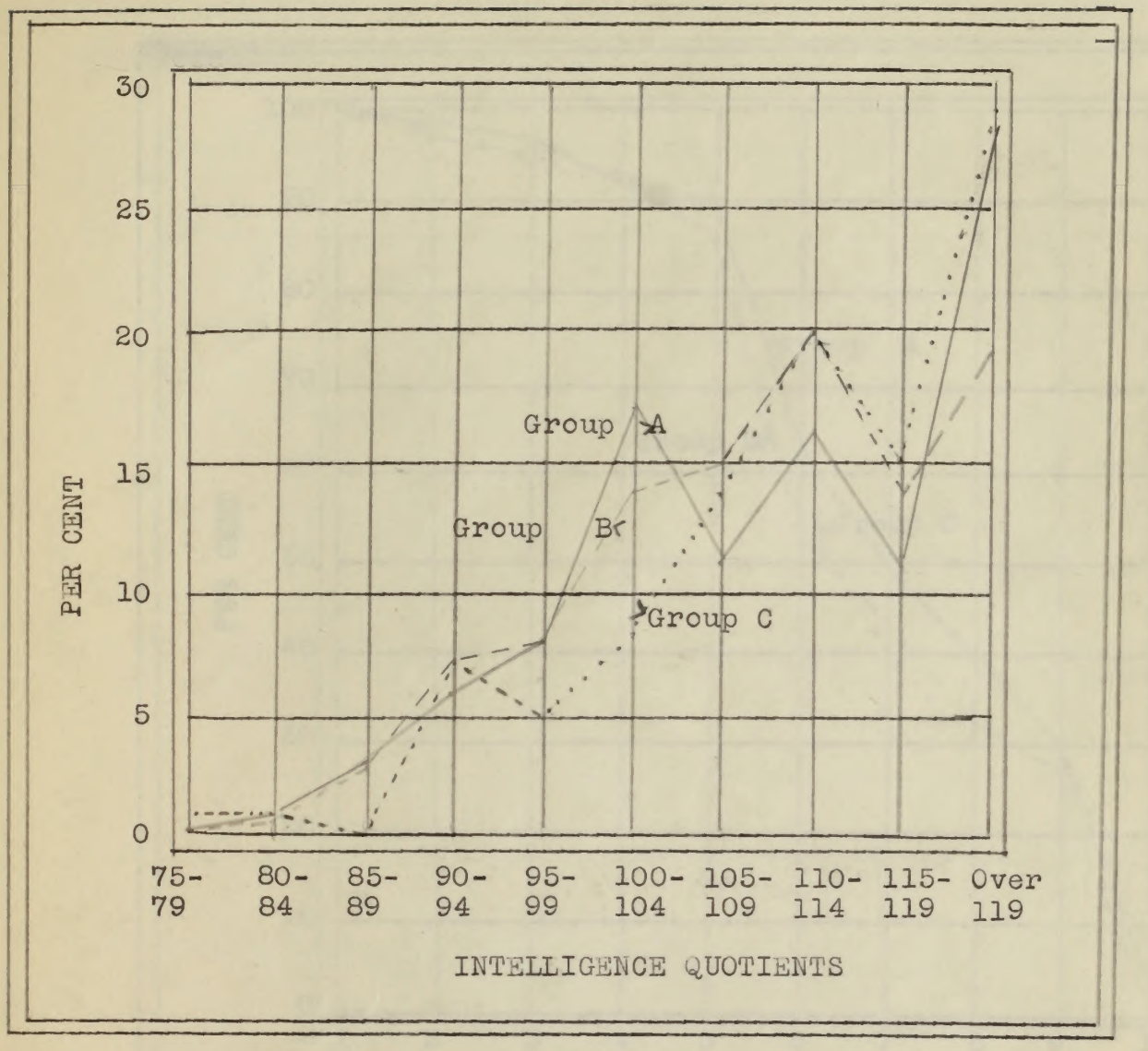
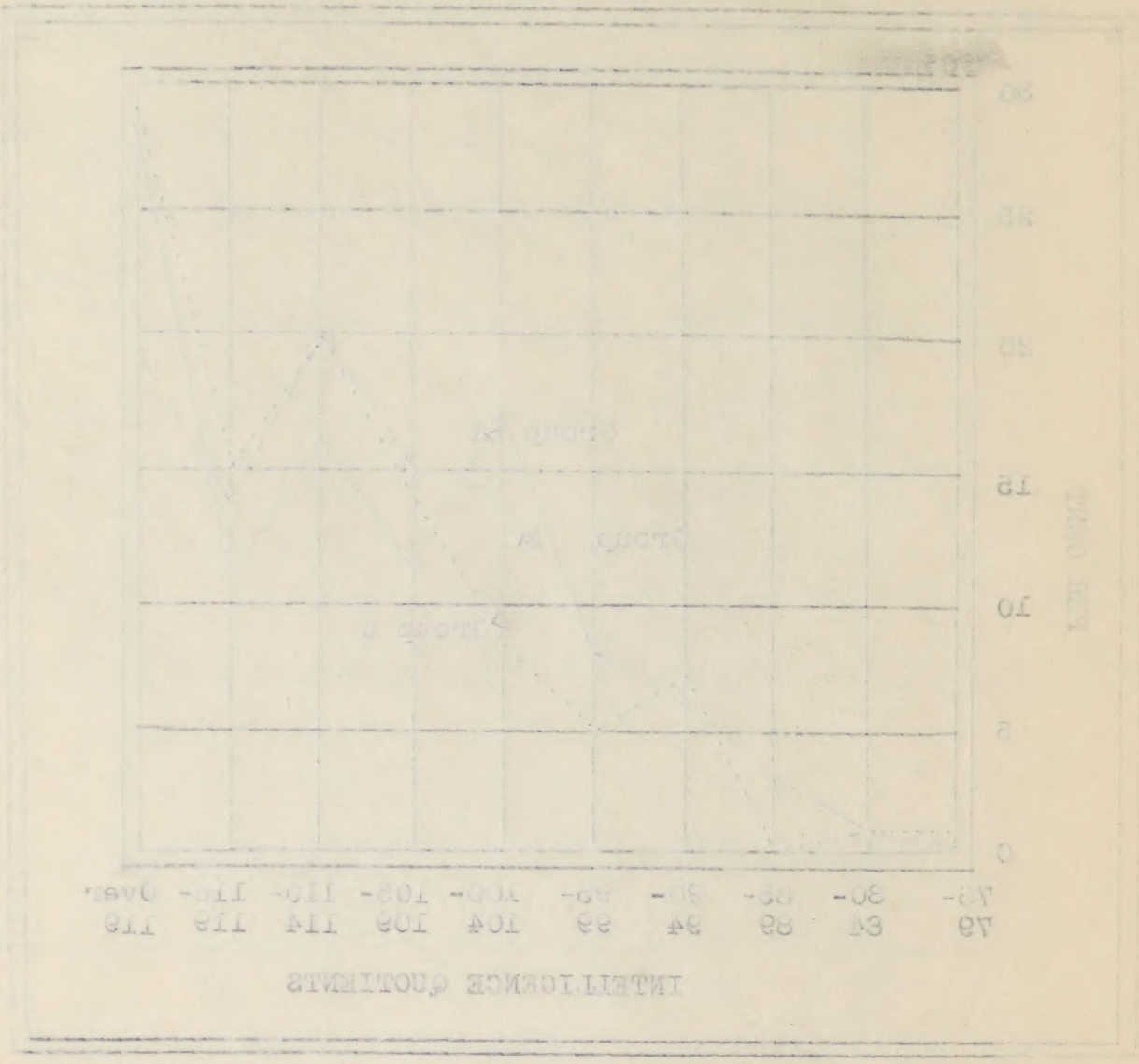


FIGURE 4

PERCENTAGE OF COUNSELEES IN EACH OF THREE INTELLIGENCE-QUOTIENT GROUPINGS

Group A: 105 Counselees
Group B: 423 Counselees, 1932-1933
Group C: 75 Counselees, 1933-1934


0
5
10
15
79-
84
89
94
99
104
109
114
119
124
129-
Over

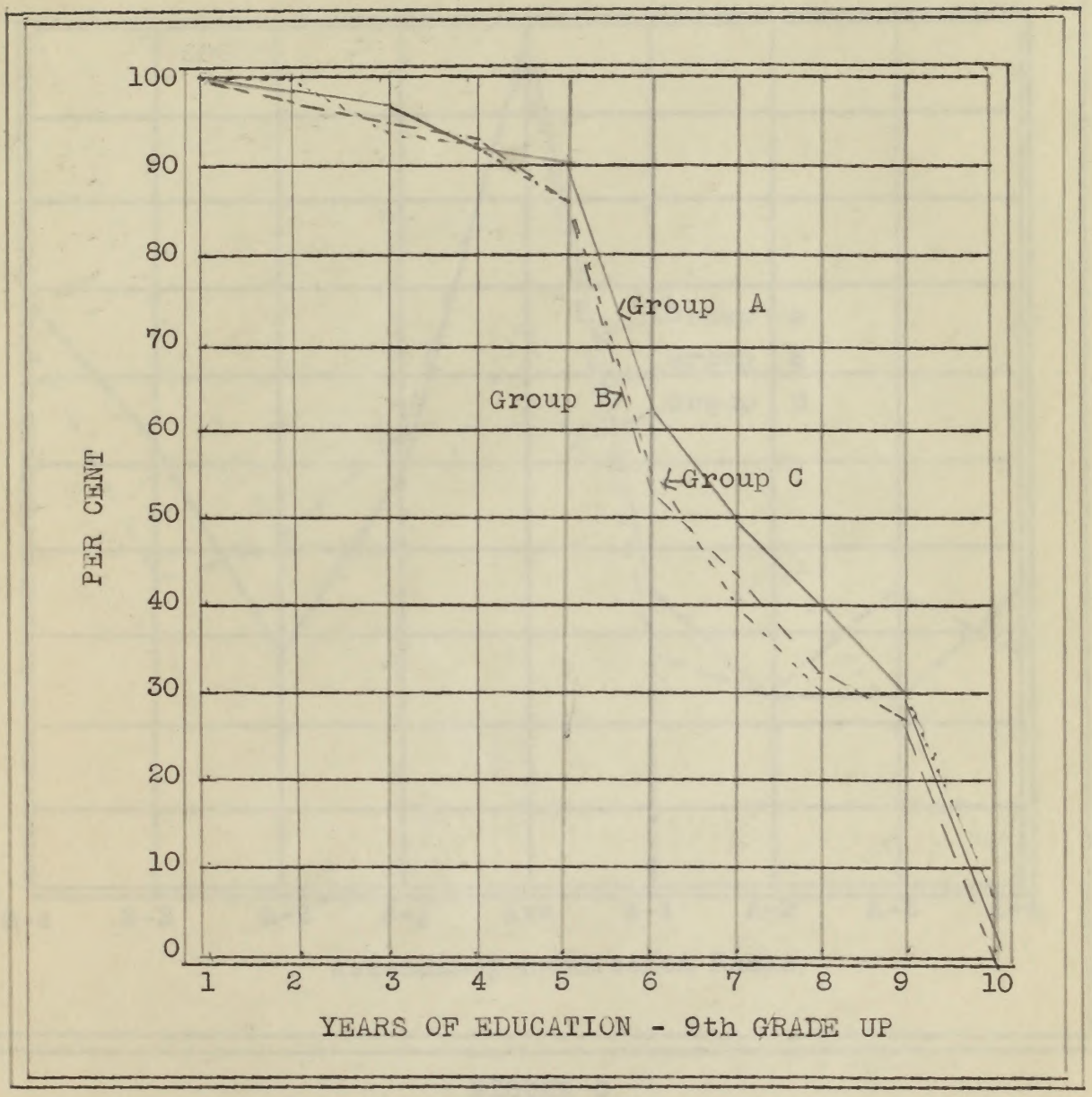
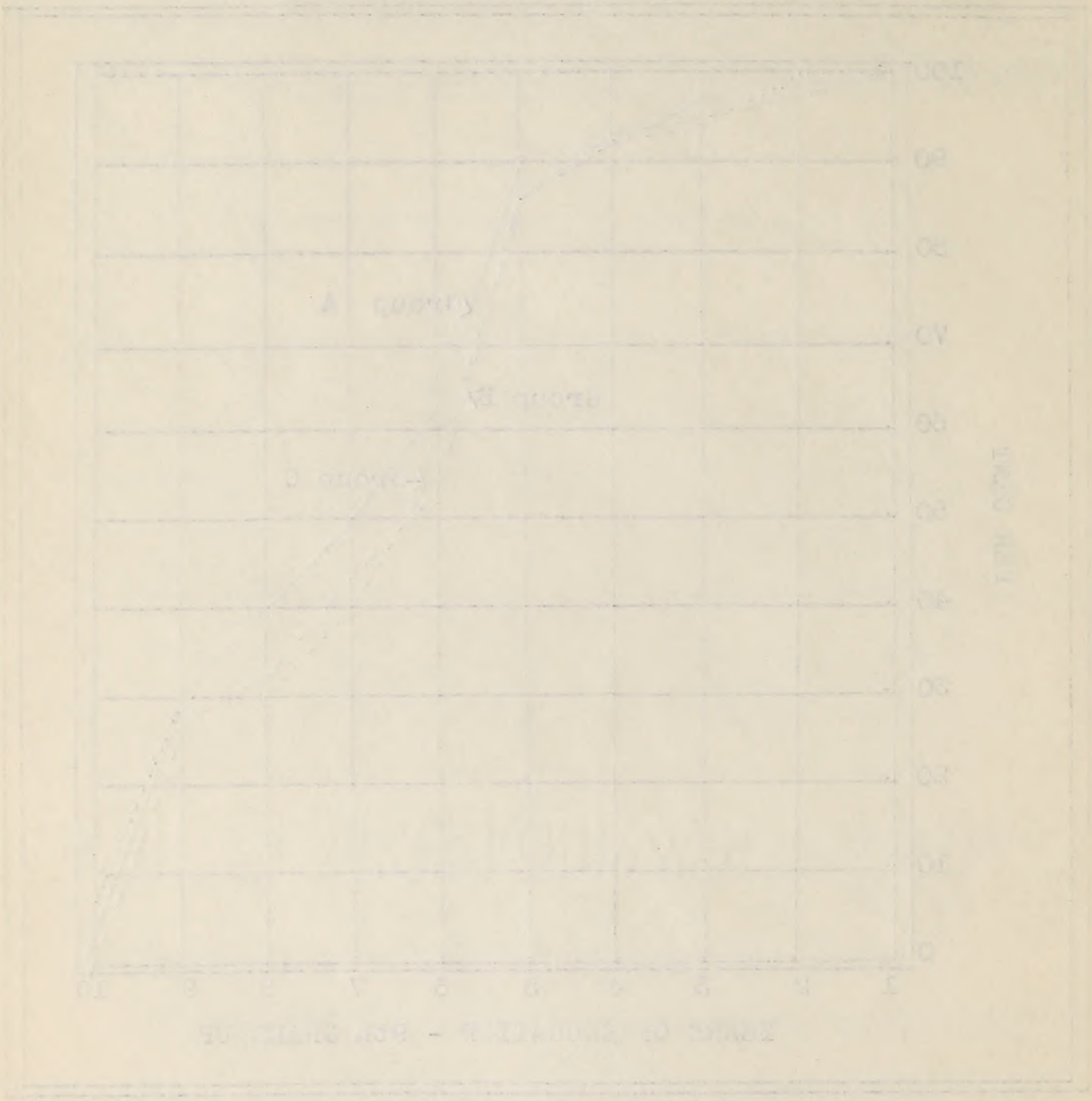


FIGURE 5

PERCENTAGE OF COUNSELEES IN EACH OF THREE YEARS-OF-EDUCATION GROUPINGS

Group A: 105 Counselees
Group B: 480 Counselees, 1932-1933
Group C: 80 Counselees, 1933-1934



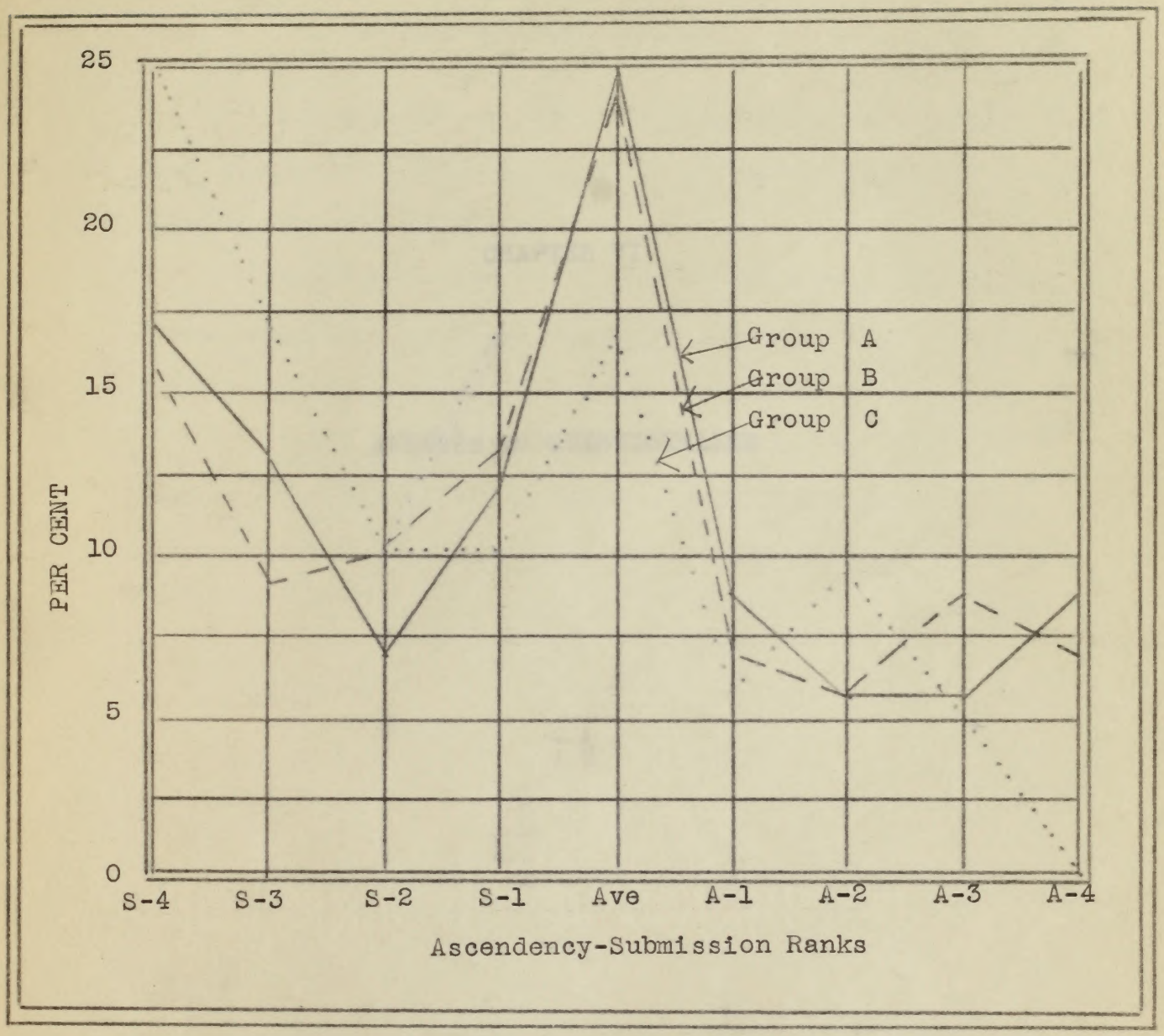
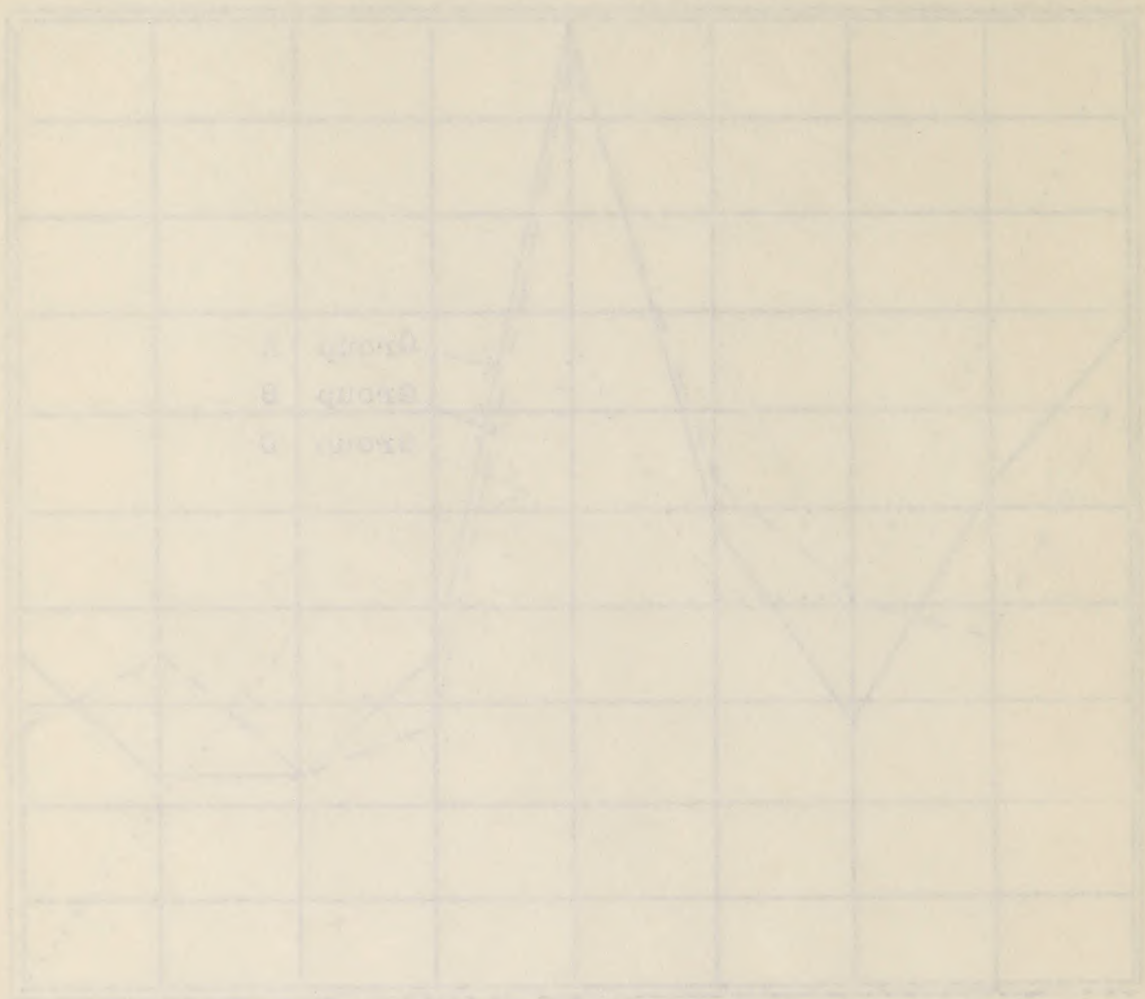


FIGURE 6

PERCENTAGE OF COUNSELEES IN EACH OF THREE ASCENDENCY-SUBMISSION GROUPINGS

Group A: 105 Coulselees
Group B: 425 Counselees, 1932-1933
Group C: 78 Counselees, 1933-1934



CHAPTER VI

ANSWERS TO QUESTIONNAIRE

CHAPTER VI

ANSWERS TO QUESTIONNAIRE

In Table IX, on the following page, is given the replies to the various forms of questionnaires sent to the 105 counselees.

Questions 1, 2 and 9 were omitted from the card questionnaire,[1] which accounts for the large number of "No replies" on these questions.

It seems evident from the replies that the course did stimulate the counselee to think more clearly about a vocation and about himself.

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1. Appendix, p .46.

TABLE IX

ANSWERS TO QUESTIONNAIRE

Question	Yes	No	No Reply
1. Did the Job Counseling Course help you to think more clearly about a vocation	60	20	25
2. Did you get a clearer picture of your own aptitudes, abilities and personality	64	16	25
3. Have you been working since the course	99	6	
4. Are you working now	87	18	
5. Did you undertake any education since the course	52	53	
6. Did the evening lectures in the course prove valuable to you	84	17	4
7. Did the group meetings help you in selecting a vocation	34	48	23
8. Were your contacts with your individual counselor of value to you	44	48	13
9. Did you do anything to better your situation as a result of talks with your counselor	38	36	31

Work.--Realizing that a majority of the counselees were out of work at the time of taking the course, and had been for some months (an average of 8 months unemployed), it is significant that all but six have done some work of a gainful nature during the two years that have passed since they took the course; and that four-fifths of them are working at the present time. Perhaps it is also of special interest that only seven of those who secured jobs did so under the E.R.A. or other governmental relief administrations. This would seem to indicate that the course stimulated them in general to go after and to secure work.

Study.-- That one-half took some form of further study since the course is a hopeful sign. Certainly many more should have done this, and were advised to. That they did not follow the advice, indicates the inertia that grips so many of these men.

Evening Lectures.-- Quite evidently the evening lectures were found valuable by a majority of the counselees. The only suggestion there would be to make sure of maintaining the high quality of the lectures and to make sure that in every respect they keep pace with changing economic trends.

Group meetings.-- As to the afternoon group vocational meetings, some of the men expressed the opinion that the discussions did not apply specifically to their particular problems. Obviously, a large enough number of meetings could not be arranged to cover every phase of work, and only a comparatively small number of the more common forms of work can be discussed. However, more thought can profitably be given to this phase of the course.

Individual Counseling.-- This may be considered, possibly, the most important link in the entire chain of the Job Counseling Service. That 46 counselees expressed themselves as receiving no value from their contacts with the individual counselors shows that there is a decided weakness in the link. More will be said about this under "Recommendations", though the following analysis of the replies may clarify the situation:

Many of the answers under "No reply" were to the effect that the counselee got a job, and could not see the counselor, and in a few cases that the counselor perhaps did not make sufficient effort to reach the counselee.

To be a true "counseling"service, it is necessary for each counselee to see his counselor at least one or

more times. In fact the counselee should be followed up until he is definitely on the right track.

Much of the criticism offered by counselees is to the effect that the counselors meant all right, and gave some interesting interviews, but that they apparently were of little practical value in the matter of adjusting the counselee to the problem of job-finding.

In considering this criticism, we must remember that the counselors are volunteers, mostly business men who have no specific training for this technical work, and who are doing their best through a sincere desire to serve. The splendid thing is that in so many cases the counselor has been able to help the young man back to a sane view-point in respect to himself and to work, and has in many cases actually helped the counselee to get a job. However, the fact still remains that in a majority of cases the results have not been wholly satisfactory. In most cases there has been only one call.

True Counseling.-- Resultful counseling requires:

1. Getting acquainted with the counselee --

   a. through a study of the test results
   b. through talking with the man himself
   c. sometimes through supplementary data from home or former employer

2. Helping counselee to map out a course of action, including --

   a. thorough self-analysis
   b. analysis of jobs he is fitted for
   c. analysis of study needed
   d. decision or aim for independent action

3. Follow-up through additional calls, as required --

   a. to keep up counselee's courage
   b. to stimulate him to further action or study
   c. to help him in following up leads

It would be impossible to work out any such program in one interview. Also, in general, volunteer workers cannot give the time needed for such a course of counseling, nor are they usually fitted, either by training or experience, to give the most effective sort of counseling.[1]

Betterment Work.-- On Question 9, the replies indicated in many cases that little was done as a result of the individual counseling, largely because little was suggested by the counselor in the interview. Then, again there is the inertia of many of the counselees to cope with. Some will do immediately anything they can to help themselves, and need only wise and kindly suggestions. Others will listen to all the advice in the world, and make all the promises required, and then will go right on doing nothing. More effective counseling, however, will probably result in more action on the part of counselees.

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1. See "Comments of Counselees", p. 77; and "Recommendations, p. 120.

COMMENTS BY COUNSELEES

I believe much knowledge of the service can be gained through spontaneous remarks by counselees, either at the time of taking the course or, more significant, later when they have had the opportunity to see it in perspective and to evaluate its worth more clearly. Hence I am quoting here such remarks of the 105 study-group as seem to have weight and value for this study:

"Employers' viewpoint and evaluation of test findings instructive. Extended contacts in social field until work was securedthrough these...."

"Contact with many others also unemployed also anxious to find work is one of the benefits." Vocational Group Talks "give better insight and do help one choose a vocation."

"Dear Mr. Riley: I want to express my thanks for your kind interest. I hope to remember you as one who has given me much encouragement, perhaps more than any one else during the siege of unemployment which I passed through."

"Evening lectures helped me to understand conditions and circumstances attending the securing of a position..... I secured a tutoring position through him (the counselor. I realized that I lacked specialized training so I took up accounting and as a result secured a position. I think that the course as a whole was very beneficial and could be undertaken profitably not only by those who are unemployed, but also by those who are employed."

Evening lectures "made me realize my real desires... It was during this course that I realized my desires for the ministry strong enough to seek a means of attaining them."

Evening lectures "very illuminating as to ways and means of getting a job..... Made contact through his (the counselor's) appointment with firm now working for (2 years). Nothing but praise and appreciation for the work Mr. Saul and Mr. Riley are doing. Wish I had had the course late high school or early college."

"Mr. Riley suggested shorthand and typing training to supplement my previous college education, to give me something definite to offer in looking for a job. Would not have landed my job without it."

"My talk (with counselor) was of great importance because as a result of it I am attending evening school and have bettered my position since."

"These (evening) lectures gave me an understanding of present-day conditions."

"The course helped me."

"The (evening) lectures succeeded in centralizing the problems which were before us. Their suggestions were helpful."

"Yes, mind solace (from the evening lectures) inspired urge to keep trying ..... course strongly beneficial."

Course "helped me to get better perspective. Out of work two years before course. It gave me courage to stake all on a course of study that has resulted immediatly in an excellent job."

Evening lectures "very interesting, wonderfully clear .... Counselor gave me more confidence. Course helped a lot -- better morale."

"They (the evening lectures) were most interesting and enlightening as to one's vocation and a glimpse of jobs I might hope to hold at some future time..... I do thank you for the Job Counseling Course, and hope that its good work will continue in the future."

"I think your counseling course is very good. It shows a fellow that which he is best fitted for, and gives him something to do while he is loafing."

"I got a job during the time I attended the lectures."

"I soon accepted a position coming through your Employment Bureau, and also attended night classes at a commercial school for a few months..... At the time I took the course my thinking was in a state of great confusion and fear regarding many problems which were confronting me at the time..... My great need at that time was for sober advice to enable me to get my feet on the ground again. From my own point of view the personal talks I had with you (Mr. Riley) were the most beneficial of any part of the course. I say this because I greatly needed steadiness of thinking in general and your relation of personal experiences to me helped me somewhat in this direction..."

"To me the lectures acted as a moral support. The men I came in contact with prevented me from becoming entirely discouraged and putting the blame solely upon myself."

"I feel I obtained a much clearer picture of my capabilities and short-comings than I could have done in any other way. I honestly believe the Y.M.C.A. is to be congratulated upon doing a real service for young men, not only in need of work, but very much in need of guidance."

"Principally the fact was brought home (in the lectures) that my own efforts were the only thing to bring success, and that if one studies his own capabilities, not his lack of ability, and the needs of business and industry, there would be found a place of employment .... (The group lectures helped) by pointing out that business has many phases and does need men for the work..... The urging to do all that I knew to get started again and to keep going, the assistance in learning more about how to get started again, and, most important, the help in actually finding a part-time job to get me started again and to carry me through with further studies to be fitted better for work in my line when it should come -- these are the most important values of your service. The constant note of optimism among your workers, that one can find work if he continues doing <u>all</u> he can to find the place and to make himself useful in it, that is the most important value of your service."

"Yes, the lecturers were sincere in their efforts and certainly broadened my viewpoint."

"I found them (the evening lectures) very much worth while. The series was very well arranged and the lecturers were all men of the first rank in their respective fields."

"Very interesting" (the evening lectures)

"I improved my self-confidence and enjoyed the friendship acquired. The course helped me and gave me an insight into counseling in my own line of work."

"The evening lectures were helpful. They brought up problems that were similar to my own..... I endeavored to follow his (the counselor's) advice as closely as possible and to gain additional education. I believe the Y.M.C.A. Job Counseling Course is really worth while."

"Course was fine. Very much help."

"I really believe the service which you give is a great help."

"They (the evening lectures) were interesting and added to one's general knowledge and were uplifting. (The group talks) eliminated most of the types of vocation, and made me more determined to get into production control. ..... I think you are doing a great deal of good, and wish your aid could be in every high school."

"I enjoyed the course .... and feel it was well worth the time and money I spent in attending."

As a result of talking with the counselor I "made a plan of job-getting, and got a job."

".... business is getting better, and everything going according to schedule I am in line for something real again."

The evening lectures "helped me to analyze myself better, and to get a clearer picture of economic facts." The group meetings "made me realize that I could be successful in more than one line of work.... The one talk that I had (with my counselor) helped me to secure a position."

Evening lectures: "Some were instructive in a small way, others encouraging, which helped a great deal."

The evening lectures were "very helpful and interesting. Created necessary spark to get started.... Had I a greater opportunity to follow up, they (the group meetings) would have been of inestimable value.... Daily, as I put more of its teachings to use, I have more fully realized the value of the course -- which certainly far exceeded expectations and is greatly responsible for lifting me out of the rut, and for the progress I have made. I have earned more and pushed ahead further than ever before."

Lectures were "very helpful. Very pleased with course, but got chances for old work so went at it again."

The evening lectures "broadened my outlook or picture of employment field -- discussion groups later were interesting -- should be continued."

"I was aiming at one job. The course made me see I shouldn't be too particular, so took any job."

"They (the evening lectures) gave me a fuller understanding."

"They (the evening lectures) showed what an employer wants and needs.... I believe the course to be a good move, as it helps a man to size up his abilities and handicaps."

"Evening lectures "helped broaden one's view of world."

"The contacts with broadened minds and experience did help."

"The evening lectures gave a working basis..... On the whole the course was quite helpful inasmuch as it gave a starting point and defined the limits."

"The evening lectures were interesting and I enjoyed the lecturers."

"I think the course is a good source of vocational information."

It is interesting to note that only 13 of the 105 appeared definitely dissatisfied with the course. Of these 13, one said the course did him no good. Another said he was "not pleased with the service; felt it was a waste of time." A third writes, "I do not consider I have benefited from the course because I have failed to get the kind of work I want to do."

A Difficult Case.-- Perhaps the most disappointing case of the entire 105 was a young man of 28, IQ of 103, a college graduate who had also taken studies at three other institutions of specialized instruction. He reported receiving no help because "Mr..... won't help me get a position." Delving into his past history, we find that on graduating from college he went to work selling for an uncle, at $18 a week. Not liking the pay, he quit and got an office job at $20, from which he was fired because of "lack of co-ordination". The uncle says "The boy appears physically lazy and unable to do anything for himself." Uncle will not re-hire him. This seems to be probably a case where psychiatric treatment would be indicated. Lacking such a department, the Job Counseling Service can only refer a case to the Boston Psychopathic Hospital, and there is no compulsion to make a man go there even if it will help him.

SUGGESTIONS BY COUNSELEES

Following are a few suggestions made by counselees on their questionnaires which may be helpful in making further refinements of the service:

"Young men who have been trained as teachers should, if possible, receive business men for counselors. The object of the course was to open up new fields to us."

Secured "nothing (from the counselor). Talks limited and non-instructive. Weakest scene in the drama when it ought to be strongest. Up to that point, course strongly beneficial."

"I think very few men are so satisfied with their particular vocation that they will encourage young man to enter it -- they rather discourage them and try to turn them to another field. I think you should by all means guard against letting your counselors make this mistake."

"I think that if the time could be alloted, each individual should be studied."

"The counselor did not give me a clear enough idea of the tests."

"The course, in my opinion, is too short and too general to be of any great or lasting value."

"Own experience was ... that not enough attention and help was given in the self-analysis, which really is the crux of the problem, and finding a type of job into which final picture would fit with the least number of disadvantages."

"Suggest development of hobbies to develop vocational possibilities."

CHAPTER VII

CONSOLIDATED DATA ON COUNSELEES

CHAPTER VII

CONSOLIDATED DATA ON COUNSELEES BY AGE GROUPINGS

Table X, on the following page, shows an interesting, and perhaps significant relationship between the ages of counselees and their intelligence quotients. For instance, all but one man above the age of 37 fell below the median intelligence rating of 112.

Between 37 and 21 years of age, the weight of the intelligence ratings was above the median.

This may indicate that above the age of 37 the more intelligent men were better able to look out for themselves, while in the younger groups it was the distinctly superior young men, mentally, who applied for counsel and guidence -- the very type of men for whom the Job Counseling Service was formed.

TABLE X

DISTRIBUTION OF COUNSELEES SHOWING RELATION BETWEEN AGES AND INTELLIGENCE RATINGS

Ages	Above Median Intelligence Quotient	At Median	Below Median	Total
54 - 56	1	0	0	1
51 - 53	0	0	0	0
48 - 50	0	0	3	3
45 - 47	0	0	1	1
42 - 44	0	0	3	3
39 - 41	0	0	3	3
36 - 38	1	1	2	4
33 - 35	5	0	6	11
30 - 32	4	0	4	8
27 - 29	6	1	6	13
24 - 26	9	0	7	16
21 - 23	13	1	8	22
18 - 20	6	0	7	13
Totals	45	3	50	98

TABLE X

TABLE XI

DISTRIBUTION OF COUNSELEES SHOWING RELATION BETWEEN AGE AND YEARS OF PRIOR EDUCATION

Years* of Education	Distribution by Age Groups													
	54 56	51 53	48 50	45 47	42 44	39 41	36 38	33 35	30 32	27 29	24 26	21 23	18 20	Totals
Post Graduate 10								2	1			2		5
College 9				1	1	1		6	4	5	4	8		30
" 8							1				1		2	4
" 7									3	2	2	3		10
" 6	1					1	1	1		2	2	1		9
High School 5			1				1	2		3	7	6	10	30
" 4					1					1				2
" 3			1		1	1						2	1	6
" 2									1					1
Ninth Grade 1			1				1							2
Totals	1	0	3	1	3	3	4	11	9	13	16	22	13	99

*See also Table V, p. 61 sup.

Relation of Age to Former Education.-- In the groups from ages 21 to 35 we find all but three of the college graduates, as well as the five post graduate men. Only nine outside of this age grouping even attended college. There are only four in this large group who did not graduate from high school, and only twenty-two who did not go beyond high school.

Of the 18 to 20 age group, twelve graduated from high school, and two completed three years of college -- an excellent record for thirteen youngsters during the depression.

Perhaps more of the younger college graduates were out of work and seeking guidance than of the older ones. Also, more of the younger graduates or non-graduates had not yet secured the right jobs. This study would seem to place the best field for the Job Counseling Service between the ages of 18 and 35 -- where it has stood since the first year when older men were occasionally admitted to the course.

TABLE XII

DISTRIBUTION OF COUNSELEES TO SHOW RELATION BETWEEN ASCENDENCY-SUBMISSION RATINGS AND STRONG INTEREST SCORES*

Vocations	Ascendency-Submission Ratings								
	S-4	S-3	S-2	S-1	Ave	A-1	A-2	A-3	A-4
Engineer	1	3	1	5	7	1	0	2	0
Accountant	1	1	2	2	2	0	1	0	1
Y.M.C.A. Secretary	0	0	0	1	1	0	0	0	0
Farmer	0	0	0	3	0	0	1	0	0
Office Clerk	4	3	2	2	5	1	2	0	3
Doctor	1	1	0	1	0	0	0	0	0
Chemist	0	1	1	0	0	0	0	0	0
Purchasing Agent	2	0	1	0	2	1	0	2	1
Teacher	1	1	2	0	3	0	1	0	0
Personnel Director	2	1	1	0	0	2	0	2	0
Journalist	1	2	0	0	0	2	0	1	0
Mathematician	1	0	0	0	0	0	0	0	0
Architect	1	0	0	0	0	0	0	0	0
City School Superintendent	0	0	0	0	1	0	0	0	0
Advertiser	0	0	0	0	0	0	0	1	0
Physical Director	0	0	0	0	0	0	0	0	1
Lawyer	0	0	0	0	0	0	0	0	1
Vacuum Cleaner Salesman	1	1	0	2	1	2	0	1	2
Life Insurance Salesman	0	0	0	0	1	1	1	0	0
Real Estate Salesman	0	0	0	0	0	1	0	0	0

*Using only Strong scores of A and B.

TABLE XII

DISTRIBUTION OF COMMUNICATIONS TO SHOW RELATION BETWEEN ASSUMED AUTHORITY-SUBMISSION RELATIONS AND STRONG INTEREST SCORES*

Vocations	Assumed Authority-Submission Relations							
	E-4	E-3	E-2	E-1	Ave	A-1	A-2	A-3	A-4
Engineer	1	3	1	5	7	1	0	2	0
Accountant	1	1	2	2	2	0	1	0	1
Y.M.C.A. Secretary	0	0	0	1	1	0	0	0	0
Farmer	0	0	0	3	0	0	1	0	0
Office Clerk	4	3	2	2	5	1	2	0	2
Doctor	1	1	0	1	0	0	0	0	0
Chemist	0	1	1	0	0	0	0	0	0
Purchasing Agent	2	0	1	0	2	1	0	2	1
Teacher	1	1	2	0	3	0	1	0	0
Personnel Director	2	1	1	0	0	2	0	2	0
Journalist	1	2	0	0	0	2	0	1	0
Mathematician	1	0	0	0	0	0	0	0	0
Architect	1	0	0	0	0	0	0	0	0
City School Superintendent	0	0	0	0	1	0	0	0	0
Advertiser	0	0	0	0	0	0	0	1	0
Physical Director	0	0	0	0	0	0	0	0	1
Lawyer	0	0	0	0	0	0	0	0	1
Vacuum Cleaner Salesman	1	1	0	2	1	2	0	1	2
Life Insurance Salesman	0	0	0	0	1	1	1	0	0
Real Estate Salesman	0	0	0	0	0	1	0	0	0

*Using only Strong scores of A and B.

Relationship of A-S Reaction Ratings to Strong Interest.--In studying this relatioship I have taken into consideration only Strong ratings of A or B. According to Strong[1] a rating of A indicates probable success in a vocation, while B is doubtful. C or D indicates a person whose interests are quite dissimilar to those of the successful men in that calling. Hence, we should have a wide enough range of Strong ratings on each counselee to have at least one A or B plus score. A study of the complete record of all counselees[2] indicates that in few instances have ratings of B or lower been attended with any apparent vocational success.

In TABLE XI we find some interesting relationships which may help as a guide to more extensive use of the Strong Interest Test. More engineers rated Average or Submissive than Ascendant. Those on the A side were probably more of the executive or salesman type. This held true also of accountants and office clerks. Purchasing agents were scattered rather evenly through A-S ratings. Teachers tended to the Submissive side. Journalists and personnel workers were widely scattered in A-S ratings.

Most significant are the salesmanship classes. Two men rank Average; 4 were on the S side, and 8 on the A side. It is perhaps significant that of the four

1. STRONG: Manual, op. cit., pp. 4-6
2. See TABLE XVI, Appendix, pp. 1-8

listed under S, only one has undertaken the study of salesmanship, while none of the 4 has ever, either before or after the course, attempted any selling. Under Average, the Vacuum Cleaner Selling score man gave no record of selling, while the Life Insurance Selling man did take up the study of Insurance, and became an insurance salesman.

Of the 4 sales scores under A-1, only one had a record of having sold; and he subsequently became an assistant general manager. He rated higher on personnel work than on selling, which may account for the change in occupation. In the other cases the men had low IQ's and were in inferior jobs.

Under A-2 one man rated B plus on Life Insurance Selling; had been a salesman, but through the Job Counseling Course had come to a realization that he wanted to become a minister, and has taken up that study.

A rating of B on selling under A-3 was of a man who had been a salesman. This was too low to be conclusive, and we are not surprised to find him changing his job.

Two ratings indicating salesmanship under A-4 were of young men of 19 and 23 neither of whom had had sales experience.

From all this it would seem that we cannot blindly follow the ratings on the Strong test any more than we might say that a man is fore-doomed to a certain walk in life because of his A-S reaction ratings. Rather, it would seem that the Job Counseling Service has been unable, through lack of funds and personnel, to go anywhere near far enough in its study of the significance of A-S ratings and of Strong interest scores. Both of these tests are indications of tendencies in the individual which should be analyzed and the meanings of which discovered, so that the very best and most effective counsel may be given to head the counselee toward that general line of vocational activity for which he seems best adapted, and if possible into the specific job most suited to his abilities and aptitudes.

BY STRONG INTEREST
SCORES

In this section we are considering the counselees vocationally. In the consolidated data table[1] we have before us a complete diagnosis of test results, of work and educational history and of age and IQ on each counselee. In addition we shall add such materials from the questionnaires and talks with the counselees as will illuminate this record still further.

TABLE XII shows the records of 85 counselees who appear to have benefited in various ways from the course. They learned more about themselves, vocationally; they in some cases took up further study along lines indicated by the test results; some of them changed to different types of work and some of them bettered their positions.

Of the 20 counselees not included in this table, four were not scored on the Strong Test, while 16 had Strong ratings which indicated nothing in predicting success in a vocation. Evidently, we have put our finger on one weakness in the service -- insufficient ratings on the Strong Interest test. Mr. Strong says[2]: "In diagnosing a man's occupational interests it is very helpful to compare scores from all 24 scales, for in this

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1. TABLE XVI, Appendix 1-8
2. STRONG: Manual, op. cit., p.1; Appendix, p. 46

way the interest pattern may be more closely ascertained." This is resorted to only where a man has practically no idea what he wants to do. In almost any case, however, it would be helpful to have his scores in enough cases so as to find one or more vocations in which the man ranks A or B plus.

A particularly interesting case in point was that of WMC: 54 years of age, IQ of 116, A-S rating of S-2, and Strong score of A on Engineer, Purchasing Agent, Office Clerk, and Chemist. This man, with but one year of formal high school education, educated himself up to at least the equivalent of one year of college work. He had had before coming to the Job Counseling Service a long and varied work experience, with salaries running as high as $60 a week. He has worked largely with the same type of concerns, and in a variety of jobs, ranging from selling to office manager, and having considerable to do with engineering. His S-2 rating probably reflects a lack of aggressiveness that has had something to do with his tending toward office work rather than selling. He has not taken further study, but has kept looking for work he knew he could do, and has finally secured it.

TABLE XIII

DATA ON 85 COUNSELEES SHOWING RELATION OF STRONG INTEREST SCORES TO WORK AND STUDY

Strong Scores (of A or B)	Number	Same Work Before Course	Studied to Qualify	Took Other Study	Better Job After Course	Got Job Indicated by Test	Got Job Contra-Indicated	Changed Work as Result of	
								Test	Course
Architect	1	1	0	0	0	0	1	0	0
Accountant	9	5	7	1	6	7	1	5	1
Chemist	1	0	1	0	0	0	0	1	1
Doctor	3	0	0	2	0	0	2	0	1
Engineer	20	13	6	2	9	10	8	4	6
Farmer	2	1	1	0	2	1	1	1	1
Journalist	5	0	0	5	3	0	5	0	4
Lawyer	1	0	0	1	1	0	0	0	1
Life Insurance Salesman	3	0	1	1	0	1	2	1	2
Personnel Director	5	1	0	2	1	2	3	2	1
Purchasing Agent	4	0	0	1	2	0	4	0	2
Teacher	5	3	1	2	1	1	1	1	1
Vacuum Cleaner Salesman	3	0	0	1	0	0	2	0	0
School Superintendent	1	0	0	0	0	0	0	0	0
Office Clerk	20	11	2	8	2	6	12	1	6
Mathematician	1	0	1	0	0	0	1	1	1
Physicist	1	1	1	1	0	1	0	0	0
Totals	85	36	21	27	27	29	43	17	28

Summary of TABLE XII.-- Of this group of 85:

36 worked, before the course, at jobs indicated by their ratings on Strong Interest test.

21 took special study after the course to qualify for work indicated by the test. This is significant, since it represents one of the chief purposes of the Job Counseling Service. That no larger number took specialized training was due perhaps to three causes: financial inability; inertia; and insufficient counseling or follow-up.

29 secured work indicated by the test. This is a significantly high number, when it is considered that most of the men were out of work at the time of taking the course, and that economic conditions made it very difficult to secure any jobs at all.

17 changed to work indicated, as a result of the tests.

27 secured better-type jobs.

Results outside of test results.-- That the course itself was helpful to the counselees, regardless of any close tie-up between test results and final work results, is indicated by the following:

27 took other study, not indicated by the tests.

43 took jobs contra-indicated by the tests, as a result of economic pressure.

28 changed their work as a result of the course.

5 only of the 85 have not worked since the course.

From theabove it would seem that less than one-third of the counselees took full advantage of the course, or secured full benefit from it. Yet, in times of depression, with millions of men out of work, and dealing with a group, 80% of whom had been out of work on an average of 8 months, and who ranged on the submissive side in their social reactions, these results are extremely creditable. Especially is this true when we find that 94% of our study-group[1] have worked at some time since taking the course, and 30% of them all bettered their jobs.

Strength.-- This seems to indicate that the course improved:

1. The morale of the group, as a whole
2. The job-finding technique of the group
3. The willingness of the men to take any job rather than to remain idle

Weakness.-- As regards following up specific test findings, the results might indicate:

1. Not broad enough scoring of Strong Interest Tests
2. Not enough vocations studied in afternoon groups
3. Not surficiently comprehensive individual counseling.

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1. See FIGURE 7 , p. 118.

DEGREES OF BENEFIT

From a thorough study of the consolidated data[1] and all supplementary information available, I have divided the 105 study-group into three smaller groups:

36 men who benefited most, divided into:

9 who followed through with study and work.

27 who were encouraged to study further, and all but one of whom secured work.

34 who were helped in improved morale and somewhat in getting a job. They would have shown greater gains had the service followed them up for a longer period, with more emphasis on test results and more intensive counseling.

35 who benefited least from the course. Most of them indicated that little value was received from the course, while 13 of them were openly dissatisfied.

A further study of these three major groups brings to light some interesting data.

The 36 who Benefited Most.-- First we shall consider the nine whose results seem to be the most typical of what we should like to find in the majority of cases. They are typical of the whole 105 in range of ages, of IQ's, and

1. TABLE XVI, Appendis, pp. 1-8

and of A-S Reaction Scores. In education they were superior to the entire group, in that all were high school graduates; two continued through two years of college, while four graduated from college.

Results of the 9.-- Eight took more education along lines indicated by Strong Interest scores.

All nine secured jobs along lines indicated by test results; all bettered their positions; six definitely changed their kind of work as a result of the course; and all gave credit to the course for help. The following are typical of this group:

DJG, a clerk of 25, 110 IQ and S-4 rating; showing A in Clerical Aptitude and B plus in CPA interest. Takes course in Cost Accounting, and secures part-time job figuring percentages in a wool house. Is very enthusiastic about the course.

AFC, 20 year old chauffeur and auto mechanic, with 119 IQ and S-3 rating; shows A in Mechanical Aptitude and A on Engineering interest. Says he wants to be in radio maintenance work, and is encouraged to take up a course at the Lowell Institute, which led him directly to the sort of work he wanted. It took the stimulus of the Job Counseling Service to overcome his S-3 inertia, and get him started in the right direction.

JWM, 48 years, with Average rating on A-S, and only 99 IQ, had worked as a Safety Engineer in an insurance company. Rating B plus on Insurance Selling interest, he took up a home course of study in that line of work, and soon went to work as an insurance salesman.

FCC, a 23-year old chap who had done only laborer's work, although he was a college graduate with an IQ of 123, had an A-S rating of -Ave, C on clerical aptitude and D on all other aptitudes, and B plus on Teaching interest. As a result of the course he took a course in Vocational Guidance at Harvard, and secured work teaching and coaching boys' activities.

Results of the 27.-- The medians of this group were as follows: Age, 24 years; IQ, 111; Education, two years of college; A-S rating, S-1, comparing very closely with the medians of the entire 105[1]. The only essential difference between this group and the 9-group above is that in this case the counselees were stimulated to take up study, but not necessarily study that coincided with their test results. Especially interesting cases in this group are these:

WCA, 24 years, 127 IQ, rating B plus on Life

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1. cf. medians of 105 on p. 65.

Insurance Selling interest, though he had always been interested in the ministry. He had been a salesman, and lost his job in the depression. The Job Counseling Service helped him to fix his interest permanently on theology which he is now studying.

RHB, a 22 year old college graduate who had done a little selling which his S-3 rating made difficult. On advice of his counselor he took up shorthand and typing to be able to offer more to a prospective employer, and has worked through a couple of agreeable jobs to his present position as manager of a wholesale linen house. His rating of B plus on Journalism interest links up with a real desire of his to write,-- an interest which cannot at present bring him a living.

HFC is one of the few in this group whose Strong scores harmonize with work interests. Rating A on Office Clerk and C on Lawyer, he had been a clerk in a law office prior to the course. His 100 IQ and S-4 reaction rating, together with the C on Lawyer interest may have had something to do with his lay-off, although it is more likely that his make-up was ideal for detail work in a law office and that his loss of work was due to the depression. The course stimulated him to take up further study of law,

and he has since secured part-time work examining titles which seems to be a sort of work for which he is well suited.

JC, 21, 109 IQ, 2 years of college, had done nothing but odd jobs. His B plus rating on Engineer interest served as a stimulus. As a result of the course he took up the study of Diessel engines, supporting himself meanwhile by cooking.

JSBG, 28 years, 99 IQ, S-4 rating, with B plus on Purchasing Agent interest; had done woodworking and some photography. Had been out of work for two years; was discouraged and couldn't organize his activities. Directly because of the course he finally decided to stake everything on a course in photography, for which he had always had a liking; took it, and immediately landed a good job in Texas where he is very happy.

LG, 34, with a fairly good work experience, and one year of college, was brought to realize that lack of training was his great handicap. His A rating in Engineer interest may perhaps be reflected later in business engineering. Meantime he has been encouraged to take up a definite course at the Harvard Business School, doing some temporary work part time.

FGK, with an Advertising interest rating of C, had worked, apparently successfully, as assistant advertising manager for a few years following his graduation from college where he majored in advertising. Losing that job during the depression, he has fallen back on another of his college studies, accounting. Inthis work he may well prove more successful because of his Office Clerk interest rating of A. Meantime he has taken up a study of marketing, and is aiming to have a well-rounded educationfor business when prosperity returns.

EPM indicates a wide range of interests. Rates A on Journalism interest. He has been a stenographer, had only high school education, and an S-4 rating. As a result of the course he has taken up a very wide study of music as well as a study of traffic management. This latter is to help him in the job he has secured as stenographer and assistant to a traffic manager.

AGP, a teacher and sub-master, with an interest rating of A on Personnel work, found the course a definite stimulant towards guidance work. He is, as a result, studying for a degree of Master of Education, and is developing his own guidance techniques in his school work.

The 34 who were Helped Somewhat.-- Of this group, all appear to have been helped to a better morale; all but one have worked since the course, and all but two were working at the time of this study. In short, the course succeeded in improving the general mental tone of this group and its job-finding techniques. That only 7 of the 34 took up any further study shows that the group as a whole either did not have the push and ambition of the 36 group, above, or were not sufficiently well counseled and followed up. One of these counselees will serve to emphasize these points:

CWB was the sort of case the Job Counseling Service would like to see followed through to success. A college graduate, 35, with an IQ of 124, A-S rating of A-2, and an interest rating of B plus on both Teaching and Farming. It is quite in keeping that he should be a high school principal. He likes teaching, but does not find enough problems in his present position. Knows little of the real principles of teaching, and is bored with his job. Decided to take up the study of education. Likes farming, and owns a tract of land in Maine on which it was suggested that he start

raising Christmas trees. He reports benefit from the Job Counseling course, but did not start his study of education nor do anything with the land. Apparently, the Job Counseling Service has given all it can to this man -- unless some further system of follow-up can be devised -- he will have to stir himself.

The 35 who Benefited Least.-- While in age, A-S reaction ratings and amount of education this group parallels the entire 105, there are two chief differences: Only 13 of the 35 have an IQ of 112 (the median for the 105) or better. Only 10 of the 35 had jobs that really amounted to anything before the course. They represent what might be called "border-line" cases that might have been benefited greatly by a certain tightening up of the course, greater use of the test results, wider information on vocations, more effective counseling, and a follow-up system. Some of the more significant cases are described here at length:

ETB and AFB have almost the same ratings, except in IQ's which were 107 and 88. However, AFB, with the lower IQ, had the better job both before and after the course. On Strong, ETB rated C on Lawyer, while AFB rated C both on Advertising and Engineering. They were 25 and 22 years of age. Neither reported any value from the course. It is

significant for our study that the ratings on Strong were all made on vocations entirely foreign to the occupations and training of these men; and that the individual counseling failed entirely to locate any decided interest, or to point out any attractive future course. These would seem to be cases in which a more thorough use of the Strong scoring, and a more vigorous individual counseling might have resulted in real value to the counselees.

In HFC we have a man of unusually good makeup who is still going "haywire". An engineering graduate with four A ratings on aptitudes, and A-S reaction score of S-1, he had been a salesman till the depression proved too much for him. His salaries of $24 to $50 a week do not indicate marked ability as a salesman. A graduate of Worcester Polytechnic Institute, with an Engineer interest rating of B plus, he did the obvious thing of taking up study for a Master Electrician's License, and went to work in an electric light station until conditions improve. One of his comments was: "Frankly, what I got out of the course was that my ratings were so high I should have little trouble getting along in many lines. Comforting thoughts, but the depression still is on. Perhaps I fumbled the ball."

This is another case of lack of follow through -- perhaps in the counseling, perhaps in the lack of a definite follow-up system after the course. Probably it is one of those cases described by Mr. O'Connor[1] as having so many aptitudes that the decision as to what to choose was extremely difficult, and required unusually effective counseling.

RFC was a dissatisfied case, with high aptitude ratings, not enough scoring on Strong Interests, high IQ, and only high school education. His S-2 rating and lack of education have stood in his way. He made a definite attempt to take advantage of what was offered him, and has gone to work selling insurance. His comment: "The course, in my opinion, is too short and general to be of any great or lasting value" indicates that what he needed was more guidance and follow-up and direction into some line of further study in preparation for a definite kind of work.

GBSC was below the average of the group: high school graduate, 94 IQ and S-4 rating. His B- in Engineer interest links up with his B on Mechanical Aptitude and A on Small Tool Dexterity, and with the fact that his best job was as machinist at $32 a week, from which job he was laid off. In talking, he shows little intelligence, ambition or initiative. He would require special counseling and guidance.

1. "Born That Way," op. cit., pp. 203, 204

WBH is one of the cases that most need help, and who are perhaps among the most difficult to assist. A college graduate, of sub-average IQ and S-4 reaction, he had done drafting for architects at $25 a week before the depression. He rates A in Architecture interest, B in Clerical Aptitude, and A each in Finger and Small Tool Dexterity. This would seem to be a perfect set-up for a draftsman, or for a junior architect. His counselor, himself an architect, advised him to go back to school,or to school himself in architecture. Said the counselor: "Nice fellow; a plodder rather than a genius, worth helping. Needs training, and will be ready for the next 'boom'. Promised to carry out advice." Yet, when this study was made, the counselee admitted that he had not taken up any study nor done anything to help himself. He is evidently living with his parents. He needed far more than the one talk with his counselor to bring him to a realization of what a position he is in, and the effort he must make himself to become a satisfactory member of society.

ERL is another of those difficult "geniuses". With 4 A's on Aptitudes, 131 IQ, A-3 rating, three years of college, and interest ratings of B plus on Advertising and B on Personnel work. He could have made good in many

lines, and who at 24 had gone as high as $7 a day in the Ford plant. His main difficulty seems to be a lack of adequate counseling and of a definite further course of study to develop him toward some goal, even if it be not the ultimate goal. Such a man can be very valuable to his fellows if directed right.

GBT, with one year of college, rates A on CPA interest, has worked as a bookkeeper, and is now working as such. Evidently this is what he is fitted for, although with the right amount of push he could probably qualify for a much higher type of accounting work than he has ever had. He says he was "not pleased with the service. Felt it was a waste of time." It is significant that he is the only one of the 105 who has expressed himself in quite this fashion. The counselor to whom he was referred is a trained and qualified counselor, engaged every day in placement work for a large university, who was ready and willing to give his time and advice to this man. But the man never made the first appointment.

CHAPTER VIII

SUMMARY

CHAPTER VIII

SUMMARY

Objectives of the Job Counseling Service.-- Results gained may be measured in relation to these four objectives of the service:

> Testing of counselees in order to help them determine their most favorable vocational directions -- to find the broad vocational classifications within which their test results appear to indicate the largest possibility of success.
>
> Improvement in morale.
>
> Encouragement to start a course of further study, and advice as to what course to pursue.
>
> Improvement in self-knowledge and in job-finding techniques to the end of securing specific jobs.

In studying TABLE XIV it should be borne in mind that at the time of taking the course only 20 of the young men were working. Therefore the fact that 99 of the 105 secured some sort of work afterwards, even for a temporary period, and during the height of the unemployment, and that 87 were still working at the time of this study, indicates a degree of morale-building that cannot be estimated; nor is it indicated adequately by the figure 76 in the table.[1]

1. Table XV, p.111.

TABLE XIV

WORK RESULTS OF COUNSELEES GROUPED ACCORDING TO BENEFIT DERIVED FROM THE COURSE *

Grouped in Order of Benefit Received		Worked After Course		
Group	Number	At Work Related to Test Results	At Other Work	Got Better Job After the Course
A	9	9		9
B	27	6	20	11
C	34	9	24	9
D	22	7	13	1
E	13	4	7	2
Totals	105	35	64	32
In Per Cent		33	61	30

*For discussion of these groups see p. 97 ff.

TABLE XV

HOW COUNSELEES BENEFITED FROM THE COURSE, IN STUDY, WORK AND BETTER MORALE

Grouped in Order of Benefit Received		Job Counseling Course Helped		
Group	Number	Toward Taking More Study	In Securing Work	In Building Morale
A	9	8	9	9
B	27	27	12	27
C	34	5	4	34
D	22	2	2	5
E	13			1
Totals	105	42	27	76
In Per Cent		40	26	72

Results from these two tables seem to indicate that the Job Counseling Service has met the objectives stated on page 109 in somewhat the following degrees:

	Per Cent
In securing jobs based on test results ..	33
In building morale	72
Encouragement to start further study	42
In securing jobs through better techniques	75

This figure 75 per cent, is arrived at by subtracting from 99, the number working since the course, 20, the number working at the time of taking the course, leaving 79, or 75 per cent of the total 105, who actually secured work after the course, and possibly as a result of better job-finding techniques set up by the course.

At this point, we might well review the possibility set out in Chapter IV that the findings of our study are too optimistic in view of the manner in which the questionnaire was sent out. Tables I and II, on page 51, indicate that there is a difference in the quality of the replies from counselees if received immediately on questioning, or if secured by successive follow up material. The earlier replies are evidently more

favorable than the later ones. The facts and figures shown in Tables XIV and XV and in Figure 7 give accurate pictures of our group of 105 counselees. These figures, too, are presumed to be reasonably accurate with respect to the entire group of counselees, or I might better say, relatively accurate. In other words, if we discount our results because of the chance of replies to our questionnaire being probably too optimistic, and because of the lack of a control group[1] by which we could gauge actual results without the Job Counseling Service as compared with results under the guidance of the service, yet we can still maintain that the Job Counseling Service is doing a worth while work in the community, and one that well merits continuance and expansion.

Considering the small amount of money available for the service and the vast amount of work that is entailed in its various projects, and considering also that the individual counselors have been, perforce, untrained volunteers for the most part, it must be admitted that Mr. Riley and his aides have done a remarkably fine piece of work for the young men who have come to them for guidance and help.

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1. See pp. 54, 55 sup.

Appraisal of Organization and Staff.-- My approval of the work of the staff of the Job Counseling Service is based upon the kindly, efficient and optimistic attitude that is displayed in all contacts with the counselees; upon the business-like way in which all transactions with counselees and all office routine ishandled; and upon the deep, human insight that is evident in the planning and carrying out of every detail of the course. That the young men are being helped to evaluate vocational possibilities, to look for openings for work, and to present themselves more effectively for jobs is evidence enough that the service is worth while.

Weakness in Counseling.-- That there is a weakness, and a grave one, in the counseling system that has been in force during most of the life of the service, and in the lack of a definite follow up, both of counselees and of counselors, is apparent. Nowhere in the course is there need for more adequate preparation and ability than in the matter of individual counseling. This is illustrated emphatically in the cases of men who have been counseled by Mr. Riley, Mr. Saul, and a few other counselors whose training and experience make them worthy guides to youth. Counselees of these men show definitely the results of good guidance, the kind that should be

given to every young man who comes to the service. This cannot be done on an unpaid, volunteer basis. A counselor should be a rare combination of business man, philosopher and teacher, and he should be prepared, in counseling, to spend as many hours with the counselee, over as many weeks, as may be necessary to start the young man towards an adequate goal.

Follow Up.-- There is grave need for a definite system of follow up, which shall keep the young man coming back for more guidance, checking on his activities, and prodding him at those times when he needs just a little added push to keep his aims clear and his ambition high. This, too, requires more funds, and a fully-paid counseling system.

Check-up on Counselors.-- There is one form of follow up that will cost little, and that should bear immediate fruit. That is, to require each counselee to return to the Job Counseling office after his interview with his counselor, and there to fill out a brief form which will give Mr. Riley an insight into themethods, manner and effectiveness of the counselor. This could be done in such a manner that neither the counselor nor the counselee will be aware of its significance.

Tests and Records.-- The aim of the battery of tests used by the Job Counseling Service is to sample the aptitudes, abilities, vocational interests, and personality traits of the individual counselee. While the tests as used seem to do this with somedegree of accuracy, it must be kept in mind that the results are simply indications of vocational adaptability.

These test results are of especial value where a man has no successful work history and does not know at all what he wants to do or for what he is fitted. In such a case a vocational profile may indicate the broad work classification within which he might expect to find success. Yet, along with the test results, there must be considered all other data of family, environment, education and work that might help towards indicating the particular field for his choice.

It is very evident that not enough use is being made of the Strong Interest Test[1], and arrangements should be made for scoring it at least for the seven key vocations, thus making it a more valuable guide to choice of vocation -- keeping in mind, at the same time, that this is a guide to work classifications, not to individual jobs.

1. See discussion on p. 38 ff.

Records as planned for the Job Counseling Service appear to be adequate. The only difficulty apparent is that sometimes, due to pressure of work and lack of help, the records are not all completely filled out, particularly in such small matters as dates and information about counselors. Counselors' reports are not always fully written, and papers belonging to the service are not always returned by the counselors.

Data Summarized.-- In Figure 7, on the following page, is summarized the manner in which the 105 counselees have benefitted from the course, in work, in study, and in morale. This shows, graphically, how far the Job Counseling Service has succeeded with this particular group.

In Figure 8, page 119, is shown graphically the groupings of the 105 counselees according to the degree to which they benefited from the service.[1]

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1. See pp. 97-108; 110-112, sup.

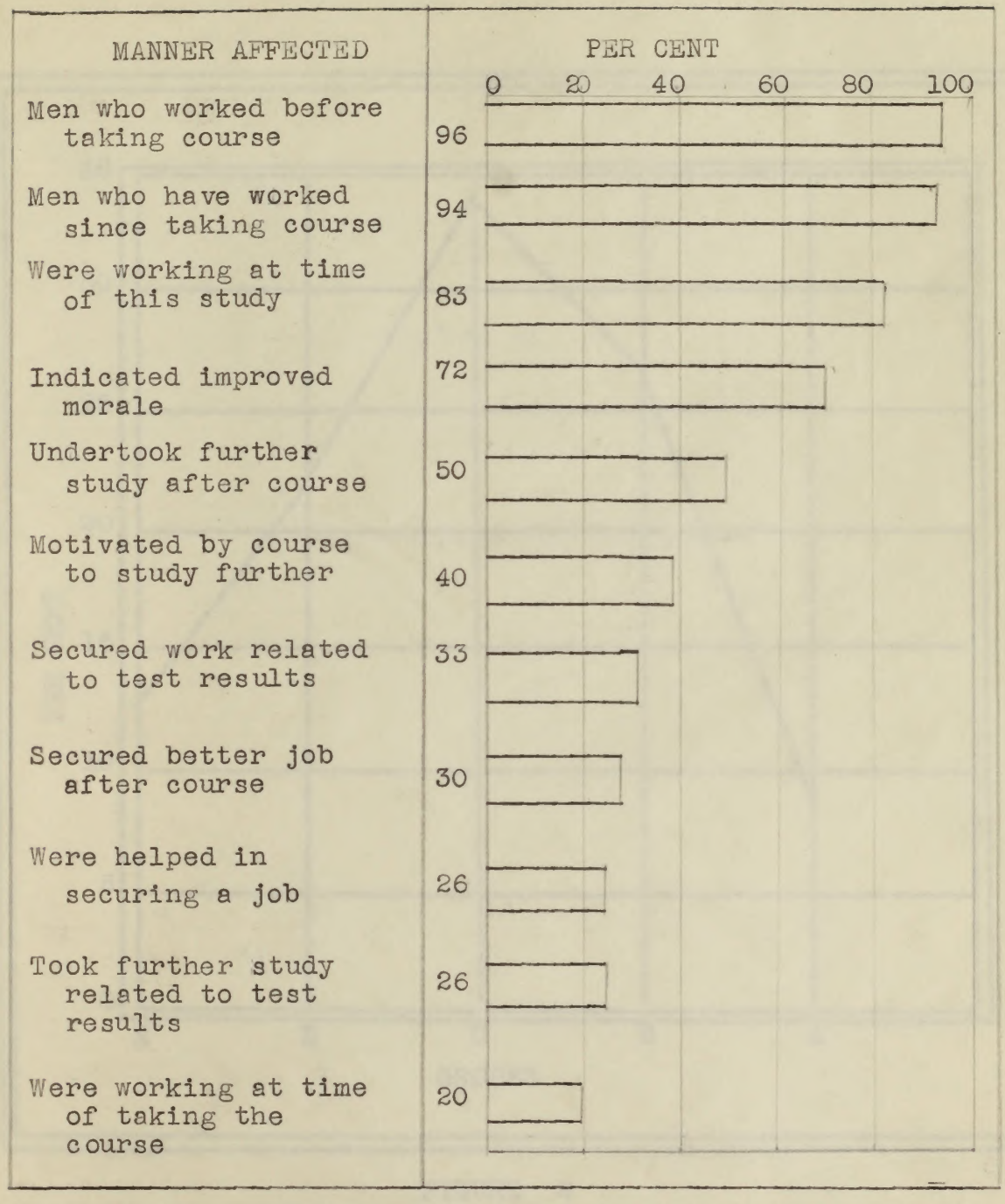


FIGURE 7.-- VARIOUS EFFECTS OF JOB COUNSELING SERVICE ON THE 105 COUNSELEES

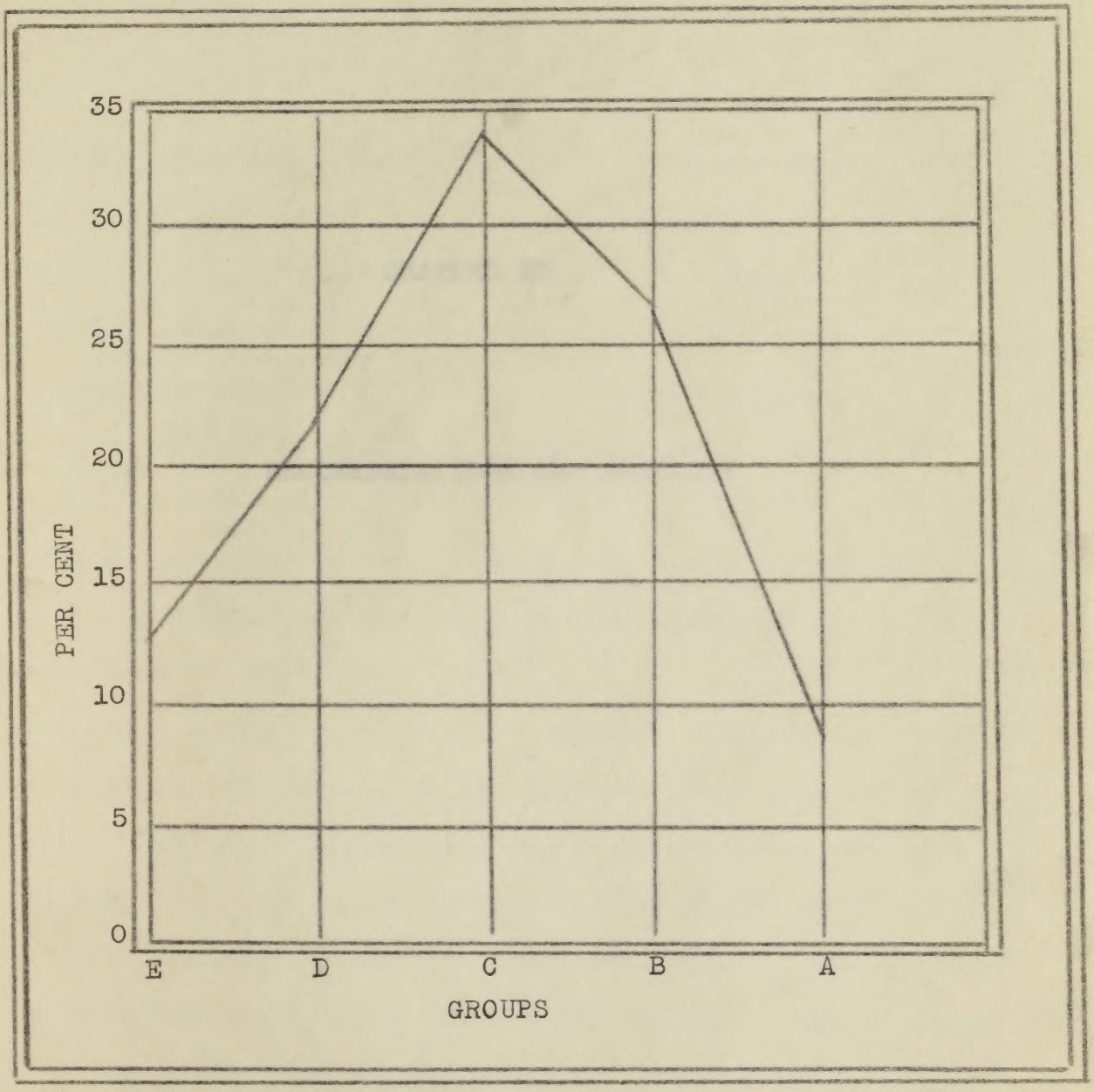
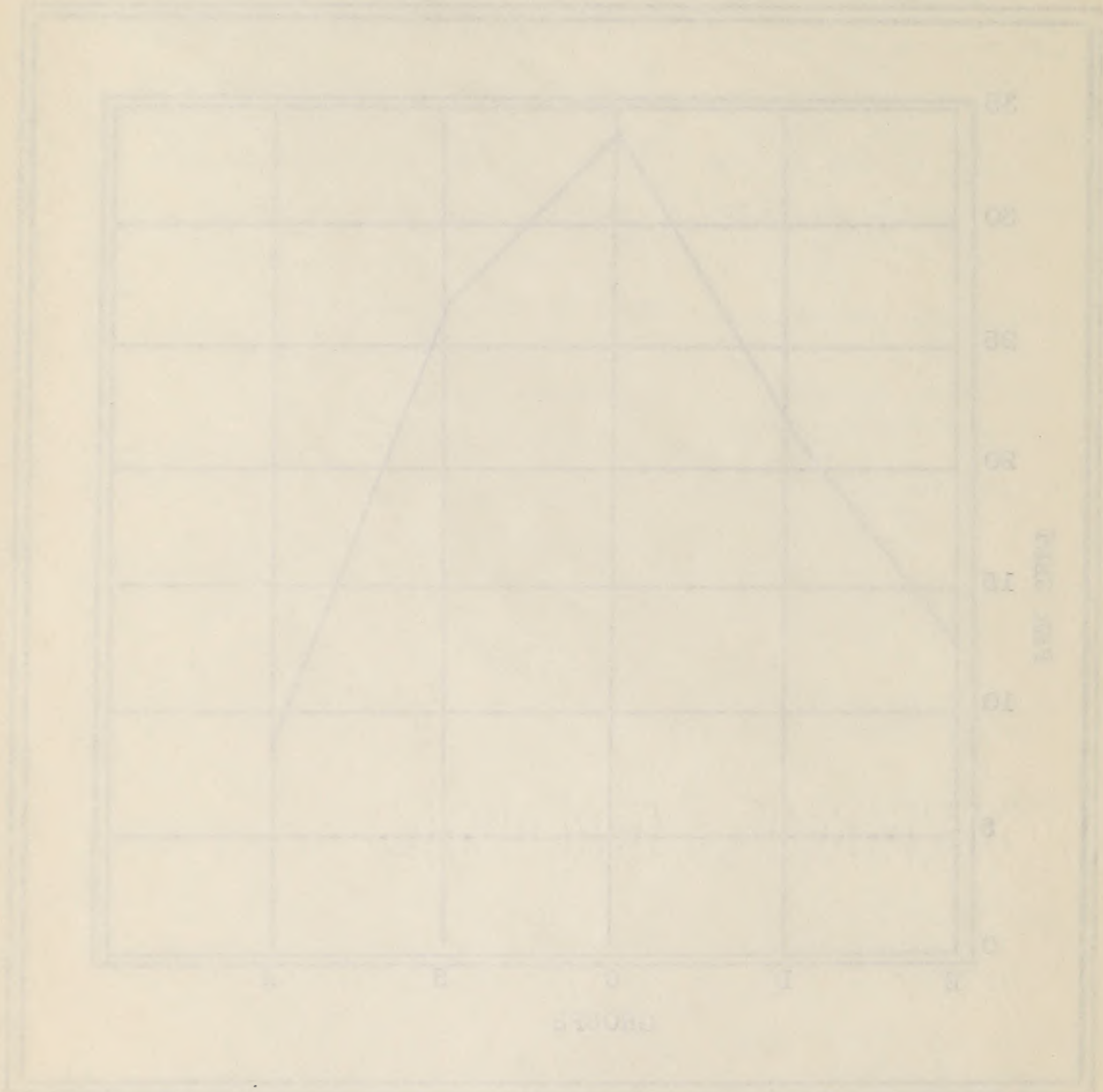


FIGURE 8

PERCENTAGE GROUPING OF COUNSELEES (105)
IN ORDER OF BENEFIT DERIVED
FROM THE COURSE



CHAPTER IX

RECOMMENDATIONS AND PROPHECY

CHAPTER IX

RECOMMENDATIONS AND PROPHECY

Throughout this study certain points stand out as needing immediate strengthening. Certain definite recommendations can be made for improvement of the existing service, while other suggestions are pertinent only after further study and research, and then can only be put into effect through the co-operation of many agencies and the expenditure of much money. However, every one of the ideas that follow seem logical workings out of a splendid system -- a service to the young men of Boston that deserves to be extended to every young man and woman of the entire Metropolitan area.

The Start -- More Money.-- To say that the service needs more funds is trite. To say that the necessary funds can be raised to place the service on the sound basis it requires is a challenge to the backers of the service and to the community. My first recommendation is that plans be made immediately for raising of adequate funds to carry out the following suggestions:

Mr. Riley's Work.-- Lift many of the detail problems from Mr. Riley's shoulders, leaving him more free for carrying

on a greater degree of research and for the solving of administrative problems. Mr. Riley is the most valuable counselor the service has, and yet it is wrong that his time, so greatly needed for executive duties, should be so largely taken up with personal interviews as at present. More clerical and counseling assistance would make possible a more effective use of his time.

Scoring of Strong Tests.-- The service needs a tabulating machine for scoring these tests completely, or the financial ability to have an outside agency do the scoring. To do full duty to the counselees, enough scores from the Strong Interest Tests should be available to show clearly a definite vocational interest pattern.

Full-time Counselors.-- Funds should be available for the appointment of at least two full-time counselors, carefully selected and thoroughly trained, men who have had wide business experience as well as guidance education, and who have enough of the teacher's point of view to be able to handle young men in the most efficient and at the same time sympathetic manner.

Further Research.-- Definite provision for continuous research should be made, particularly along these lines:

A Follow-up System.-- The development of a follow-up system that will keep the counselees in close touch

with the Job Counseling Service until some definite change for the better in their condition has been affected.

An "Ideal" Service.-- A study should be made of an all-round ideal service, to be run at reasonable cost, and fitted definitely to the needs and abilities of Boston. This suggestion may be superfluous, for it is the aim of Mr. Riley and his aides. Yet, as part of a definite research program, it should bear rich fruit, perhaps in unexpected angles.

Emotional Urges.-- Here is a recommendation for study that might revolutionize, to an extent, our entire conception of guidance. We know there are urges, inner promptings, hunches, impulses -- call them what you will -- that make one do thus-and-so, or keep him from doing certain things. What are these urges? How vital a part do they really play in the life of the individual? How closely do these promptings correlate with psychometric tests and measurements? Can these urges be labeled, tabulated and defined? Can the individual, through wise counseling, be helped to follow his emotional urges which perhaps may be found to be the surest guides to vocational success and life happiness? It seems to me that no study could be more promising of results or have more significance to the counselees.

Hobbies.-- A study should be made of the possibility of making more use of hobbies and of developing hobbies among the counselees, from the vocational, avocational and recreational angles. Here, again, may be an uncovered "acre of diamonds" just waiting to be developed for the betterment of counselees.

Information,-- The work of the Job Counseling Service is not complete when a given case is diagnosed. The man must be put into circulation, either as a student or as a worker. Hence it is wise to round out the methods of the service by enlarging on the means of collecting, organizing and making available data on educational, health, and vocational opportunities. This might take the form some day of a periodical publication, or pamphlet, that would be available both to counselors and to counselees. This should be carried to the point of finding ways of helping men to get to work when there is apparently no work to be had.

Helping Employers.-- It should also be co-ordinated with some service or agency, such perhaps as the State Employment Service, for the purpose of keeping employers informed as to the availability of definite types of workers.

Lectures and Group Discussions.-- As two of the primary objects of the course are morale building and the giving of information, it would seem that some further thought might be given to the evening lectures and the afternoon vocational discussions to the end that all the counselees may be brought into a group to sense their common problem, and that they be shown clearly the "Business Machine and How it Works" in order that some of the burden of unequal economic pressure may be lifted from their shoulders. It should be made certain in the lecture course that the counselees are sufficiently oriented in the implications and results of present-day conditions as they relate to jobs and job-finding; that as broad as possible a background of vocations be painted; and that the information given offer to the counselees a broadened understanding of how to go about the finding of a new job.

Co-operation with Other Agencies.-- For a stronger, better rounded service, the Job Counseling Service should make every effort to extend its contacts with other community agencies for public welfare, and should establish closer co-operation with educational and health organizations, with the Psychopathic Hospital and the State Employment Service, and with any other civic enterprises that are helping young people to a more useful and happier life.

LOOKING FORWARD

My work in this study has been to find out, as fully as could be, what has happened to the 105 study-group; whether the Service has functioned satisfactorily as related to this group; and to make such recommendations, based upon the findings, as might be of help in strengthening the work of the Job Counseling Service. This has been done. It remains only to take a swift glimpse into the future, and to suggest where the service seems to be headed, and to what an extent it should be made more generally serviceable to the community.

A Community Enterprise.-- The day should not be far distant when the present service should be swallowed up, so to speak, in a larger enterprise for the entire community. It should have its own headquarters, and be in close co-operation with federal and state educational and vocational enterprises, as well as with all other civic agencies for health, education and general public welfare. It should have an increased staff, its own psychopathic department, and its able corps of counselors and research workers. It should act as a co-ordinating agency for all sorts of social work both with adolescents and adults; and should serve as a clearing house for information and research, and a leader in all sorts of projects for the

betterment of society.

So far we have touched only the cream of high school graduates, those who have gone at least one or two years beyond the secondary school, and in a large proportion of cases those who have graduated from college. With an extended service, the course should be available to persons of lower IQ and of lesser education. Probably the service should start its functioning in the senior or even the junior high school, and surely with boys of 16 years and up.

Also to Women.-- The service should be extended also to women, with an equally wide opportunity for them to benefit from its morale building, its information and its aid in self-knowledge and in improving job-finding techniques.

Adjustment First.-- In all this work and study, the ideal of Adjustment should be uppermost: Adjustment of the young to a line of education and of vocation-planning that will lead eventually to the most favorable job-choice; and adjustment of adults to a changing economic order, helping them to plan to tie up the loose ends of their education, to make more of their hobbies, or to develop new and better ones, and to plan better for their vocational future -- all aiming toward genuine satisfaction in life.

APPENDIX

TABLE XVI

ORIGINAL DATA ON WHICH THIS STUDY IS BASED*

Age	IQ	Ed.	Strong Score	Aptitudes CA	MA	FD	TD	A-S	More Edu.	Work Before	After	Better job	Course helped in ed	to job	in morale	Out of work	Now wk.	No.
24	127	6	Lf.Ins B plus	A	C	B	A	A-2	Theol.	Sales	Nt.Clk		*		*	.1m	*	1
34	125	10	Eng A	B	A	A	A	S-1	....	Eng. Design	Civ.Ser Dist. superv.	*			*	2 m	*	2
24	114	5	CPA B plus	A	D	B	D	Ave	Acct	Ast. Cashier	Acct.	*	*	*	*	12 m	*	3
23	117	9	Eng B-	C	B	A	A	-Av	....	Draft	Bus dr.					17 m	*	4
35	124	9	Teach Farm B plus					A-2	....	H.S.Pr.	same				*	....	*	5
28	102	7	Law Bpl	B	C	A	D	A-4	....	Investi-gator	Ins.Br.	*			*	2 m	*	6
22	111	3	CPA Bpl	B	B	A	C	S-1	Bk.Typ	Electr.	Factory		*		*	14 m	*	7
25	107	5	Law C	A	A	A	D	S-3	....	Carpent.	same					....	..	8
19	114	5	Math B pl	A	A	B	D	S-4	Bk.Typ	.....	Odd jbs		*		*	N	..	9
28	115	9	Eng B PA Bpl	A	A	A	A	A-3	Elect	Design	Des.Draft	*	*	*	*	20 m	*	10
23	110	9	Teach B	A	A	C	B	Ave	Acct SocSer	Office	Bkkp	*	*	*	*	40 m	*	11
23	113	9	Adv C	B	B	A	A	S-1	....	Cl.Help	Clerk			*	*	1/3m	*	12

* For Key to TABLE XIV and Definition of Terms used, see pp. 9-11.

. Дох.пел.со лицев.ста.кон.пенсион.от.чепов.след' сер.бр.с.гг.

TABLE XVI (continued)

Age	IQ	Ed.	Strong Score	Aptitudes CA	MA	FD	TD	A-S	More Edu	Work Before	Work After	Better job	Course helped In ed.	Course helped to job	Course helped in morale	Out of wk	Now wk	No.
23	129	9	Eng A	B	A	B	D	S-1	....	Draft	Heat.Eng	*			*	x	*	13
..	127	9	Eng A PA A	C	A	A	B	Ave	....	Prod. Contr.	ChCl.ERA	*			*	11 m	*	14
25	112	7	CPA B pl	A	B	A	D	S-2	Acct Law	Ship'r	Bkkp	*	*	*	*	1 m	*	15
35	104	9	PA B	B	C	B	B	A-4	....	Music.	same				*	4 m	..	16
19	109	5	OfCl A VCS A					A-4	Psyc Polit	Stock cl.	Messeng.					6 m	*	17
22	116	5	Eng Bp OfCl "	C	B	A	B	Ave	Soc. Serv	Jobbing	.....		*		*	3 m	*	18
22	88	5	Adv C	A	A	A	C	S-3	....	Sm.;Ch. Teller	Invest. Secur'ty					x	*	19
37	123	8	Journ B pl	A	B	A	A	A-3	Life Phil.	Sm.;an-alist	Sales.	*	*	*	*	1 m	*	20
21	93	5	PA A	D	C	C	C	A-1	....	Chauf.	Jr.Oper-ator	*		*	*	x	*	21
22	126	9	Journ Bpl					S-3	Sten	Sales	Mgr.Whl Linen	*	*	*	*	1 m	*	22
30	97	7	L In A					A-1	....	Time check	Chauf				x	4 m	*	23
20	119	5	Eng A	B	A	B	A	S-3	Lowell Inst.	Chauf Machin	Radio maint.	*	*	*	*	....	*	24
25	123	6	Of.Cl C					S-4	....	Bk.	lunch room					17 m	*	25
33	121	9	Eng Farm B pl	A	A	A	A	S-1	Mast. elec	Sales	El.Maint		*	*	x	...	*	26

TABLE XVI (continued)

Age	IQ	Ed.	Strong Score	Aptitudes CA	MA	FD	TD	A-S	More Edu	Work Before	Work After	Better job	Course in ed.	Course to job	helped in morale	Out of Wk.	Now wk	No.
34	105	9	OfCl A	.....				A-4	....	Of Mgr Cr "	Same Temp					5 m	*	27
26	118	9	.....	.....				S-3	....	Gas Sta	same				*	..	..	28
24	106	5	Eng B-	A	D	B	A	A-4	Shd	Tel Sls	A & P		*		*	22 m	*	29
31	125	7	Adv C	B	A	B	C	Ave	....	Bottler Mchnist	Sales				x	...	*	30
20	101	5	Eng A	A	C	A	C	S-1	....	Geer Insp	Store cl.				*	..	*	31
42	100	9	OfCl A Law C	.....				S-4	Law	Law Cl.	Title exam.		*		*	..	..	32
20	90	5	Farm C	D	C	D	D	S-4	....	Caddy	Odd Jb				x	4 m	..	33
36	95	6	OfCl B VCS B	.....				S-4	Sales	Clerk	House work		*		*	13 m	*	34
21	109	7	Eng Bpl	A	B	A	B	-Av	Diesel eng	Odd jb	Cook	*	*		*	14 m	..	35
24	..	9	OfCl A	.....				...	Soc Serv	Ord Cl Sales	Soc. Serv		*	*	*	25 m	*	36
28	122	5	CPA B TeachB	B	A	A	A	S-2	Sch for unem	Theatre work	Ins sales	*			x	6 m	*	37
54	116	6	Eng A PA A OfCl A Chem A	.....				S-2	....	Of.mgr etc	w.elev co.					3 m	*	38
23	122	9	Teach B pl	C	D	D	D	-Av	Voc Guid	Labor.	Coach Teach	*	*	*	*	x	*	39

TABLE XVI (continued)

Age	IQ	Ed	Strong Score	Aptitudes CA	MA	FD	TD	A-S	More Edu	Work Before	After	Better job	Course helped in ed.	to job	in morale	Out of wk	Now wk	No.
34	94	5	Eng B-	C	B	D	A	S-4	....	Machin.	House-wk				x	10 m	*	40
24	126	9	Eng Bpl CPA B-	.....				S-3	Genl	Acct.	PubAct				*	...	*	41
34	126	9	OfCl A VCS Bpl	A	A	D	C	Ave	Acct	Cl;Spt; Agent	Claim Cl.		*		*	1 m	*	42
..	98	7	VCS A	.....				A-1	Busi.	Driver	Milk Dr.		*		*	..	*	43
..	100	..	Farm A	.....				S-1	....	.....	Sales	*			*	x	*	44
23	122	9	OfCl B pl	C	B	C	B	A-4	....	St.Cl.	Clerk	*		*	*	x	*	45
24	89	5	JournA	B	D	D	B	S-3	....	Radio Tester	Music.					..	*	46
25	112	5	PA A	A	B	D	C	Ave	.....	Sales	Clerk				*	x	*	47
18	117	5	Journ B pl Adv C	A	C	C	C	A-1	Sales	Laundr.	Sales Adv		*		*	x	*	48
21	101	7	OfCl Bpl	A	B	B	D	-Av	....	Tmkpr	BldWk					x	..	49
32	..	.	...	C	A	B	B	...	Sales	....	Janitor Elev.				*	x	*	50
25	110	7	CPA PA Bpl	A	A	A	B	S-4	Cost Acct	Clerk	Fig %	*	*	*	*	18 m	*	51
28	99	4	PA Bpl	.....				S-4	Photo	Woodwk Photog.	Photog	*	*	*	*	12 m	*	52
32	93	7	Y Sect B pl	.....				Ave	....	Cl;helpr	selling			*	*	19 m	*	53
19	108	8	Chem B pl	A	A	A	B	S-3	Bact-eriol-ogy	Cl; Sol-dering	temp.		*		*	6 m	..	54

TABLE XVI (continued)

Age	IQ	Ed	Strong Score	Aptitudes CA	MA	FD	TD	A-S	More Edu	Work Before	Work After	Better job	Course helped in ed.	Course helped to job	Course helped in morale	Out of wk	Now wk	No.
34	86	5	OfCl A	...	...	...	..	S-3	....	Clerk	StkCl				*	2 m	*	55
19	110	5	OfCl A	...	...	...	..	A-2	Busi	.....	Restau-rant	*	*		*	x	*	56
19	120	5	Adv C	B	B	C	C	A-4	....	Gas Sta	Sales				*	1 m	*	57
34	120	6	Eng A	B	A	A	B	A-1	Busi	Mgr.	Ast.Tr		*		*	6 m	*	58
26	90	5	VCS A OfCl A	A	C	A	A	S-3	....	Clerk	Mgr.Ch Store	*			*	2 m	*	59
27	102	9	Arch A	B	C	A	A	S-4	....	Draft.	Summer work					24 m	..	60
35	110	10	TeachA	B	B	A	A	S-2	Genl	Teach	.....				*	x	..	61
20	108	8	Eng C	A	A	B	A	S-4	....	Music Steward	.....					1 m	..	62
18	110	5	Eng Bpl	B	B	B	B	-Av	Acct	Caddy	Clerk	*	*	*	*	2 m	*	63
38	80	1	Eng A	D	C	C	C	A-3	Math	Auto Mec & sales	auto mec		*		*	1 m	*	64
31	109	2	Pers B	...	...	...	..	S-4	....	Radio Rep.	Recrea-tion ldr				x	11 m	*	65
22	120	5	OfCl B pl CPA B	B	A	A	B	S-1	Acct	Bkp	JrAcct	*	*	*	*	6 m	*	66
22	103	5	Eng Bpl	B	A	A	.	Ave	....	Distrib	Driver; Pressm.				*	N	..	67
23	128	10	Dr. A	...	...	...	..	S-4	Typ Shd	Farm-Sls	Ret.Sls	*	*	*	*	..	*	68

TABLE XVI (continued)

Age	IQ	Ed	Strong Score	Aptitudes CA	MA	FD	TD	A-S	More Edu	Work Before	After	Better job	Course helped in ed	to job	in morale	Out of wk	Now wk	No.
25	108	9	OfCl A Adv C	.....				Ave	Mktg	Adv.	Acct.		*	*	*	30 m	*	69
31	116	9	Pers B pl	A	D	A	B	A-1	Plan Read; Law	Sales	Ast Gn Mgr	*	*	*	*	14 m	*	70
29	122	5	Eng A	B	A	A	A	S-4	....	Mec. drafts.	Draft.				*	x	*	71
24	131	8	AdvBpl Pers B	A	A	A	A	A-3	....	Ford Assembly	ERA Odd Jb					4 m	*	72
31	125	9	Phys C	B	A	A	B	S-2	Metal Shd. Typ	Furnace operat. (steel)	same; frman		*	*	*	2 m	*	73
43	97	4	Teach B-	.....				S-3	....	Auto rent	chauf					20 m	*	74
23	117	10	CPA B	B	A	A	B	A-2	Stock Exch	Plant quarant.	Statis.	*			*	14 m	*	75
39	106	9	VCS B pl	.....				S-1	....	Asst.to exec.	.....				x	7 m	..	76
27	103	7	Teach A	.....				Ave	Acct	Bkkp	.....					...	..	77
27	101	6	OfCl A	A	A	A	B	S-2	....	Garage attdt	Gas Sta				*	x	*	78
48	99	5	LIS Bpl	.....				Ave	Ins.	Safety eng.	Ins Sls	*	*	*	*	...	*	79
28	103	9	OfCl B-	.....				Ave	Civ Serv etc	Clerk	.....				x	x	..	80
32	...	9	Journ B pl	.....				A-1	SocWk Surv'y	Sales	Clerk		*		*	3 m	*	81

TABLE XVI (continued)

Age	IQ	Ed	Strong Score	Aptitudes CA	MA	FD	TD	A-S	More Edu	Work Before	Work After	Course helped Better job	in ed	to job	in morale	Out of wk	Now wk	No.
28	124	9	TeachA Persnl Of Cl B pl	B	A	C	A	S-3	....	Teach	Office				*	4 m	*	82
29	111	5	JournA TeachB	..	..	..	..	S-4	Music Traf mngt	Clerk	Sten.Ast to Traf Mgr.		*		*	..	*	83
35	102	9	VCS B	A	A	B	A	A-3	....	Sales; Arch	Spt.Bld Const				x	..	*	84
32	104	9	Pers A	..	..	..	..	S-2	Ed.M	Teach Sub.M.	Same		*		*	..	*	85
22	131	9	CSS Bpl	..	..	..	..	Ave	....	Teach	same	*		*	*	1 m	*	86
26	101	5	VCS A OfCl A	C	A	B	B	S-1	....	A&P mgr	Stock-keepr					9 m	*	87
50	100	1	....	..	..	..	..	Ave	....	Ast Mgr	Sales				*	14 m	*	88
46	112	9	OfCl A VCS Bpl	..	..	..	..	Ave	....	Sales	ERA				*	12 m	*	89
39	98	3	Eng A	C	B	A	A	S-3	Read.	Draft. Design Eng	same					x	..	90
49	95	3	.....	..	..	..	..	A-2	....	Finance	Sales				*	12 m	*	91
37	111	5	Eng Bpl	A	A	A	A	Ave	....	Taxi Mg	Auto Sl	*			*	x	*	92
25	119	9	Eng A	..	..	..	..	S-1	....	Rodman	Mec.Eng	*			x	24 m	*	93
20	117	3	Of Cl B pl	B	B	A	A	A-1	....	Labor	Labor; Sales				*	...	*	94
42	106	3	Of.Cl A	..	..	..	..	S-4	CivS	USN;Brink Exp	Laundry		*	*	*	19 m	*	95

TABLE XVI (concluded)

Age	IQ	Ed	Strong Score	Aptitudes CA	MA	FD	TD	A-S	More Edu	Work Before	After	Better job	Course helped in ed	to job	in morale	Out of wk	Now wk	No.
27	112	9	Pers B pl	A	B	A	A	A-3	Traf Mgnt	Off Mgr	Real Est		*		*	3 m	*	96
27	123	6	Eng A	A	B	A	A	-Av	....	Drafts-man	Floor-man				*	5 m	*	97
32	126	10	Pers A Teach B pl	A	B	A	B	S-4	....	Teachr	Clerk CivServ				*	48 m	*	98
26	...	6	CPA A	.....				...	....	Bkkp	Bkkp				x	...	*	99
23	127	6	Phys Dir. B	.....				A-4	....	Clerk	Clerk				*	12 m	*	100
21	93	3	Farm C-	C	B	A	B	-Av	Agr.	Farm	Truck Farm				x	4 m	..	101
39	104	6	CPA B	.....				Ave	....	Ast.Cash.	Bk.Teller				*	5 m	*	102
22	112	7	OfCl A CPA B-	B	B	A	A	A-2	Acct.	Clerk	Of.Wk		*		*	14 m	*	103
22	104	5	.....	C	B	C	B	S-4	Phar-macy; Busi.	Camp Mgr	Clerical	*	*	*	*	...	*	104
19	126	5	Farm Docto B plus	.....				S-1	Night sch.	Odd jbs	Forestry & factory	*	*	*	*	2 m	*	105
									52	101	99	32	42	27	76 Dissat-isfied - 13	85	87	

KEY TO TABLE XVI

In this table we have the consolidated data in regard to each of the 105 counselees studied. This information was gathered from the original test results at the Job Counseling Service, from reports of counselors, and from replies to questionnaires, to telephone calls and to personal letters addressed to the counselees themselves. From this consolidated data come all the media tables in CHAPTER V, and the specific tabulations on counselees and degrees of benefit gained from the course as reported in CHAPTER VII. Full information on the tests mentioned here is given in CHAPTER III.

Definitions of Terms.--

Age -- Age of counselees at time of taking course.

IQ -- "Ability to Learn" from the Otis Test of Mental Ability, page 21, CHAPTER III.

Ed -- Level of education of the counselees, ranging from 9th grade as "1" to post graduate college, as "10".

Strong Score -- Score of counselee on Strong Vocational Interest Blank, page 44.

Aptitudes: (for description of tests see CHAPTER III)

CA -- Clerical Aptitude

MA -- Mechanical Aptitude

FD -- Finger Dexterity

TD -- Tweezer Dexterity, or ability to use small tools.

A-S -- Score of counselee on Allport's Ascendency-Submission Reaction Scale, page 41.

More Edu -- Education that counselees took after the course.

Work: Before -- Kind of work done before the course -- not necessarily at time of taking the course.

Work: After -- Nature of work secured at any time after taking the course.

Better Job -- Does it appear that the counselee secured a better grade of work, or a better-paid job after the course than he had held previously?

Course helped: in ed -- In stimulating the counselee to take more education.

" " to job -- Was the counselee helped through the course to secure a job? This does not mean that a job was secured for him, but that his job-finding technique was improved to a degree that resulted in his locating and securing a job.

" " in morale -- Did the course result in an improved morale? This is a rather intangible point to prove, yet there is a fairly definite indication by the counselees as to whether or not their morale was improved.

Out of work -- This refers to the length of time each counselee was out of work prior to starting the Job Counseling course.

Now wk -- Means that the counselee was working at the time this study was made.

No. -- This refers to the chronological number given to each of the 105 counselees, so that each one can be identified if there was any future reason for so doing.

The various vocations scored on the Strong Blank appear on the last page of the test which is numbered 44 in this report.

Under "Course helped in morale" a star (*) indicates an affirmative answer, while an "x" indicates that the counselee declared himself as dissatisfied with the course.

Under "Out of work", "3 m" indicates that the counselee was out of work three months prior to taking the course. Three dots (...) indicates that counselee was working at the time of the course; while an "x" shows that the Job Counseling Service has no record of whether or not the counselee was working.

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION
316 Huntington Avenue
JOB COUNSELLING SERVICE
APRIL 1935

Late afternoon Meetings - Vialle Room - 4:30 P M

Monday - April 22 -	Social and Economic Trends	Mr. William T. Foster
Wednesday - April 24 -	Discovering Our Vocational Assets	Dr. Fred C. Smith
Friday - April 26 -	A Philosophy of Health and Work	Dr. Martin Edwards
Monday - April 29 -	How to Choose An Occupation	Dr. Jesse B. Davis
Wednesday - May 1 -	Personality Development and Vocational Growth	Dr. Karl M. Bowman
Friday - May 3 -	Better Methods of Finding THE Job	Mr. William H. Shumway

---

Smaller group meetings dealing with information about specific fields of work to be held in Room L of this building, have been set up as follows:

Wednesday - April 24 -	Manufacturing and Production	2:00 P M
	Office Clerical, Management and Accounting	3:00 P M
Friday - April 26 -	Radio and Broadcasting	2:00 P M
	Advertising and Advertising Agencies	3:00 P M
Monday - April 29 -	Transportation and Traffic Management	2:00 P M
	The Engineering Profession	3:00 P M
Wednesday - May 1 -	Purchasing and Purchasing Agents	2:00 P M
	Credits and Credit Management	3:00 P M
Friday - May 3 -	The Field of General Insurance	2:00 P M
	Speciality Selling	3:00 P M

Friday - May 3 - Developing a Workable Philosophy of Life — Mr. William J. Riley — 1:00 P M

Tests used include - Ability to Learn, Clerical Aptitude, Mechanical Aptitude, Finger Dexterity, Small Tool Dexterity, Vocational Interests, Personality Ratings and Vocabulary. Appointments should be made with Mr. Saul for the taking of these tests.

REGISTER IN PERSON - ROOM F - BEFORE APRIL 19, 1935.

JOB COUNSELING SERVICE
OF THE
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

HEIGHT_____
WEIGHT_____

NAME_____ AGE__ MARRIED____ CHILDREN_____

ADDRESS_____ TELEPHONE_____

EDUCATION: HIGH SCHOOL COLLEGE DEGREES_____
Chock grade completod 1 2 3 4 1 2 3 4 WHAT COLLEGE_____
Other education (including correspondonco coursos, lectures - spocial courses)

_____
_____
_____

State briefly type of work your school training has fitted you to do_____
_____
_____

Work Experionco (including summor and part-time or temporary work)

Date Started	Date Finished	Name and Address of Employer	Kind of Business	What did You do	Wages	Roason for Loaving

Work Interests: State in order of preforonco, tho fields of work you wish to ontor, and tho type of work you would liko to do in thoso fields:

1st choice: _____
_____
_____

2nd choice: _____
_____
_____

3rd choice: _____
_____
_____

On tho back of this shoot or on anothor shoot, ploaso givo a moro dotailod analysis of oach job hold, covering just tho sort of work that you did, your rosponsibilitios and the number of pooplo employod undor you, and, if in salos work, stato tho torritory and tho class of trado coverod.

JOB COUNSELING SERVICE
OF THE
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

NAME _____ AGE ___ MARRIED ___ CHILDREN _____

ADDRESS _____ TELEPHONE _____

EDUCATION:

	HIGH SCHOOL	COLLEGE	DEGREES
Check grade completed	1 2 3 4	1 2 3 4	WHAT COLLEGE

Other education (including correspondence courses, lectures - special courses)

State briefly type of work your school training has fitted you to do

Work Experience (including summer and part-time or temporary work)

Date Started	Date Finished	Name and address of Employer	Kind of Business	What did You do	Wages	Reason for leaving

Work Interests: State in order of preference, the fields of work you wish to enter, and the type of work you would like to do in those fields:

1st choice: _____

2nd choice: _____

3rd choice: _____

On the back of this sheet or on another sheet, please give a more detailed analysis of each job held, covering just the sort of work that you did, your responsibilities and the number of people employed under you, and, if in sales work, state the territory and the class of trade covered.

Education Record Card

Name ..... Date .....

Address ..... Age .....

Telephone Number .....

Education:

	Grade Completed		
	High School	College	Degree
	1 2 3 4	1 2 3 4	

Other Education .....

.....

.....

.....

Source of Information .....

Test Results Card

Name

Sex Birth Date School grade at years

Occupation Lang. Diff. None Some Marked

DATE	EXAMINATION	SCORE	CONDUCT	EXAMINER

OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

By Arthur S. Otis

Formerly Development Specialist with Advisory Board, General Staff, United States War Department

HIGHER EXAMINATION: FORM A

20 Score.....

Read this page. Do what it tells you to do.

Do not open this paper, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, birthday, etc. Write plainly.

Name.....Age last birthday.....years
First name, initial, and last name

Birthday..... Class..... Date.....192...
Month Day

School or College.....City.....

This is a test to see how well you can think. It contains questions of different kinds. Here is a sample question already answered correctly. Notice how the question is answered:

Which one of the five words below tells what an apple is?

1 flower, 2 tree, 3 vegetable, 4 fruit, 5 animal.....(4)

The right answer, of course, is "fruit"; so the word "fruit" is underlined. And the word "fruit" is No. 4; so a figure 4 is placed in the parentheses at the end of the dotted line. This is the way you are to answer the questions.

Try this sample question yourself. Do not write the answer; just draw a line under it and then put its number in the parentheses:

Which one of the five words below means the opposite of north?

1 pole, 2 equator, 3 south, 4 east, 5 west.....( )

The answer, of course, is "south"; so you should have drawn a line under the word "south" and put a figure 3 in the parentheses. Try this one:

A foot is to a man and a paw is to a cat the same as a hoof is to a—what?

1 dog, 2 horse, 3 shoe, 4 blacksmith, 5 saddle.....( )

The answer, of course, is "horse"; so you should have drawn a line under the word "horse" and put a figure 2 in the parentheses. Try this one:

At four cents each, how many cents will 6 pencils cost?..... ( )

The answer, of course, is 24, and there is nothing to underline; so just put the 24 in the parentheses.

If the answer to any question is a number or a letter, put the number or letter in the parentheses without underlining anything. Make all letters like printed capitals.

The test contains 75 questions. You are not expected to be able to answer all of them, but do the best you can. You will be allowed half an hour after the examiner tells you to begin. Try to get as many right as possible. Be careful not to go so fast that you make mistakes. Do not spend too much time on any one question. No questions about the test will be answered by the examiner after the test begins. Lay your pencil down.

Do not turn this page until you are told to begin.

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EXAMINATION BEGINS HERE:

1. The opposite of hate is (?)
   1 enemy, 2 fear, 3 love, 4 friend, 5 joy ..... ( )
2. If 3 pencils cost 5 cents, how many pencils can be bought for 50 cents? ..... ( )
3. A bird does not always have (?)
   1 wings, 2 eyes, 3 feathers, 4 a nest, 5 a bill ..... ( )
4. The opposite of honor is (?)
   1 glory, 2 disgrace, 3 cowardice, 4 fear, 5 defeat ..... ( )
5. A fox most resembles a (?)
   1 wolf, 2 goat, 3 pig, 4 tiger, 5 cat ..... ( )
6. Quiet is related to sound in the same way that darkness is related to (?)
   1 a cellar, 2 sunlight, 3 noise, 4 stillness, 5 loud ..... ( )
7. A party consisted of a man and his wife, his two sons and their wives, and four children in each son's family. How many were there in the party? ..... ( )
8. A tree always has (?)
   1 leaves, 2 fruit, 3 buds, 4 roots, 5 a shadow ..... ( )
9. The opposite of economical is (?)
   1 cheap, 2 stingy, 3 extravagant, 4 value, 5 rich ..... ( )
10. Silver is more costly than iron because it is (?)
    1 heavier, 2 scarcer, 3 whiter, 4 harder, 5 prettier ..... ( )
11. Which one of the six statements below tells the meaning of the following proverb? "The early bird catches the worm." ..... ( )

    1. Don't do the impossible.
    2. Weeping is bad for the eyes.
    3. Don't worry over troubles before they come.
    4. Early birds like worms best.
    5. Prompt persons often secure advantages over tardy ones.
    6. It is foolish to fret about things we can't help.

12. Which statement above tells the meaning of this proverb? "Don't cry over spilt milk." .... ( )
13. Which statement above explains this proverb? "Don't cross a bridge till you get to it." .... ( )
14. An electric light is related to a candle as an automobile is to (?)
    1 a carriage, 2 electricity, 3 a tire, 4 speed, 5 glow ..... ( )
15. If a boy can run at the rate of 6 feet in ¼ of a second, how far can he run in 10 seconds? .... ( )
16. A meal always involves (?)
    1 a table, 2 dishes, 3 hunger, 4 food, 5 water ..... ( )
17. Of the five words below, four are alike in a certain way. Which is the one not like these four?
    1 bend, 2 shave, 3 chop, 4 whittle, 5 shear ..... ( )
18. The opposite of never is (?)
    1 often, 2 sometimes, 3 occasionally, 4 always, 5 frequently ..... ( )
19. A clock is related to time as a thermometer is to (?)
    1 a watch, 2 warm, 3 a bulb, 4 mercury, 5 temperature ..... ( )
20. Which word makes the truest sentence? Men are (?) shorter than their wives.
    1 always, 2 usually, 3 much, 4 rarely, 5 never ..... ( )
21. One number is wrong in the following series. What should that number be?
    1 4 2 5 3 6 4 7 5 9 6 9 ..... ( )
22. If the first two statements following are true, the third is (?) All members of this club are Republicans. Smith is not a Republican. Smith is a member of this club.
    1 true, 2 false, 3 not certain ..... ( )
23. A contest always has (?)
    1 an umpire, 2 opponents, 3 spectators, 4 applause, 5 victory ..... ( )
24. Which number in this series appears a second time nearest the beginning?
    6 4 5 3 7 8 0 9 5 9 8 8 6 5 4 7 3 0 8 9 1 ( )
25. The moon is related to the earth as the earth is to (?)
    1 Mars, 2 the sun, 3 clouds, 4 stars, 5 the universe ..... ( )
26. Which word makes the truest sentence? Fathers are (?) wiser than their sons.
    1 always, 2 usually, 3 much, 4 rarely, 5 never ..... ( )

27. The opposite of awkward is (?)
1 strong, 2 pretty, 3 short, 4 graceful, 5 swift..... ( )

28. A mother is always (?) than her daughter.
1 wiser, 2 taller, 3 stouter, 4 older, 5 more wrinkled..... ( )

29. Which one of the six statements below tells the meaning of the following proverb? "The burnt child dreads the fire."..... ( )

1. Frivolity flourishes when authority is absent.
2. Unhappy experiences teach us to be careful.
3. A thing must be tried before we know its value.
4. A meal is judged by the dessert.
5. Small animals never play in the presence of large ones.
6. Children suffer more from heat than grown people.

30. Which statement above explains this proverb? "When the cat is away, the mice will play." ( )

31. Which statement above explains this proverb? "The proof of the pudding is in the eating." ( )

32. If the settlement of a difference is made by mutual concession, it is called a (?)
1 promise, 2 compromise, 3 injunction, 4 coercion, 5 restoration..... ( )

33. What is related to disease as carefulness is to accident?
1 doctor, 2 surgery, 3 medicine, 4 hospital, 5 sanitation..... ( )

34. Of the five things below, four are alike in a certain way. Which is the one not like these four?
1 smuggle, 2 steal, 3 bribe, 4 cheat, 5 sell..... ( )

35. If 10 boxes full of apples weigh 400 pounds, and each box when empty weighs 4 pounds, how much do all the apples weigh?..... ( )

36. The opposite of hope is (?)
1 faith, 2 misery, 3 sorrow, 4 despair, 5 hate..... ( )

37. If all the odd-numbered letters in the alphabet were crossed out, what would be the tenth letter not crossed out? Print it. *Do not mark the alphabet.*..... ( )
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

38. What letter in the word SUPERFLUOUS is the same number in the word (counting from the beginning) as it is in the alphabet? Print it..... ( )

39. What people say about a person constitutes his (?)
1 character, 2 gossip, 3 reputation, 4 disposition, 5 personality..... ( )

40. If 2½ yards of cloth cost 30 cents, what will 10 yards cost?..... ( )

41. If the words below were arranged to make a good sentence, with what letter would the second word of the sentence begin? Make it like a printed capital.
same means big large the as..... ( )

42. If the first two statements following are true, the third is (?) George is older than Frank. James is older than George. Frank is younger than James.
1 true, 2 false, 3 not certain..... ( )

43. Suppose the first and second letters in the word CONSTITUTIONAL were interchanged, also the third and fourth letters, the fifth and sixth, etc. Print the letter that would then be the twelfth letter counting to the right..... ( )

44. One number is wrong in the following series. What should that number be?
0 1 3 6 10 15 21 28 34..... ( )

45. If 4½ yards of cloth cost 90 cents, what will 2½ yards cost?..... ( )

46. A man's influence in a community should depend upon his (?)
1 wealth, 2 dignity, 3 wisdom, 4 ambition, 5 political power..... ( )

47. What is related to few as ordinary is to exceptional?
1 none, 2 some, 3 many, 4 less, 5 more..... ( )

48. The opposite of treacherous is (?)
1 friendly, 2 brave, 3 wise, 4 cowardly, 5 loyal..... ( )

49. Which one of the five words below is most unlike the other four?
1 good, 2 large, 3 red, 4 walk, 5 thick..... ( )

50. If the first two statements following are true, the third is (?) Some of Brown's friends are Baptists. Some of Brown's friends are dentists. Some of Brown's friends are Baptist dentists.
1 true, 2 false, 3 not certain..... ( )

51. How many of the following words can be made from the letters in the word LARGEST, using any letter any number of times?
great, stagger, grasses, trestle, struggle, rattle, garage, strangle..... ( )

52. The statement that the moon is made of green cheese is (?)
1 absurd, 2 misleading, 3 improbable, 4 unfair, 5 wicked..... ( )

53. Of the five things following, four are alike in a certain way. Which is the one not like these four?
1 tar, 2 snow, 3 soot, 4 ebony, 5 coal..... ( )

54. What is related to a cube in the same way in which a circle is related to a square?
1 circumference, 2 sphere, 3 corners, 4 solid, 5 thickness..... ( )

55. If the following words were seen on a wall by looking in a mirror on an opposite wall, which word would appear exactly the same as if seen directly?
1 OHIO, 2 SAW, 3 NOON, 4 MOTOR, 5 OTTO..... ( )

56. If a strip of cloth 24 inches long will shrink to 22 inches when washed, how long will a 36-inch strip be after shrinking?..... ( )

57. Which of the following is a trait of character?
1 personality, 2 esteem, 3 love, 4 generosity, 5 health..... ( )

58. Find the two letters in the word DOING which have just as many letters between them in the word as in the alphabet. Print the one of these letters that comes first in the alphabet..... ( )
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

59. Revolution is related to evolution as flying is to (?)
1 birds, 2 whirling, 3 walking, 4 wings, 5 standing..... ( )

60. One number is wrong in the following series. What should that number be?
1 3 9 27 81 108..... ( )

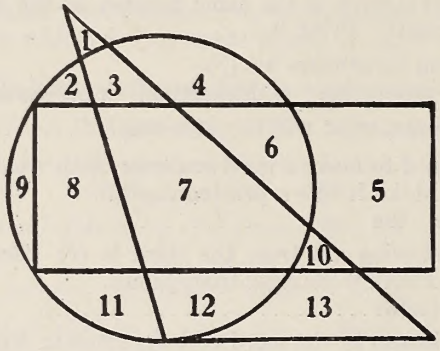
61. If Frank can ride a bicycle 30 feet while George runs 20 feet, how far can Frank ride while George runs 30 feet?..... ( )

62. Count each N in this series that is followed by an O next to it if the O is not followed by a T next to it. Tell how many N's you count.
N O N T Q M N O T M O N O O N Q M N N O Q N O T O N A M O N O M ..... ( )

63. A man who is averse to change and progress is said to be (?)
1 democratic, 2 radical, 3 conservative, 4 anarchistic, 5 liberal..... ( )

64. Print the letter which is the fourth letter to the left of the letter which is midway between O and S in the alphabet..... ( )

65. What number is in the space which is in the rectangle and in the triangle but not in the circle? ( )



66. What number is in the same geometrical figure or figures as the number 8?..... ( )

67. How many spaces are there that are in any two but only two geometrical figures?..... ( )

68. A surface is related to a line as a line is to (?)
1 solid, 2 plane, 3 curve, 4 point, 5 string..... ( )

69. If the first two statements following are true, the third is (?) One cannot become a good violinist without much practice. Charles practices much on the violin. Charles will become a good violinist.
1 true, 2 false, 3 not certain..... ( )

70. If the words below were arranged to make the best sentence, with what letter would the last word of the sentence end? Print the letter as a capital.
sincerity traits courtesy character of desirable and are..... ( )

71. A man who is influenced in making a decision by preconceived opinions is said to be (?)
1 influential, 2 prejudiced, 3 hypocritical, 4 decisive, 5 impartial..... ( )

72. A hotel serves a mixture of 2 parts cream and 3 parts milk. How many pints of cream will it take to make 15 pints of the mixture?..... ( )

73. What is related to blood as physics is to motion?
1 temperature, 2 veins, 3 body, 4 physiology, 5 geography..... ( )

74. A statement the meaning of which is not definite is said to be (?)
1 erroneous, 2 doubtful, 3 ambiguous, 4 distorted, 5 hypothetical..... ( )

75. If a wire 20 inches long is to be cut so that one piece is $\frac{2}{3}$ as long as the other piece, how long must the shorter piece be?..... ( )

KEY
Higher
Form D
Page 2

OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

By Arthur S. Otis, Ph.D.
Formerly Development Specialist with Advisory Board, General Staff, United States War Department

MANUAL OF DIRECTIONS AND KEY (*Revised*)

For Intermediate and Higher Examinations

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Introductory

Contents. In this manual will be found the complete directions for administering and scoring the Intermediate and Higher Examinations, directions for interpreting the scores in the light of the educational problems which the tests will help solve, and directions for applying the results of the test to the solution of those problems.

Scope. The Higher Examination together with the Intermediate Examination constitute the Otis Self-Administering Tests of Mental Ability, covering the range from the 4th grade to the university. The Higher Examination is designed for high school students and college freshmen. The Intermediate Examination is designed for Grades 4 to 9. The Higher and Intermediate Examinations are similar in form, but they differ in content and difficulty.

Forms. Each examination is issued in four alternative forms, Forms A, B, C, and D, alike except in content.

Special Features

Self-administration. In each of these examinations provision is made for the student to read for himself on the first page of the examination booklet all the directions needed for the examination. As the 75 items constituting each examination are in a single list, these are answered by the examinee without interruption. The examiner, therefore, has merely to distribute the blanks, see that all understand the printed directions, and give the signal to begin. He may then leave the class in charge of an assistant. For this reason the tests have been called " self-administering " tests.

Simplified scoring. In addition to the underlining of the correct one of several alternative answers, as is customary in group tests of mental ability, provision is made in these examinations for placing the number of the answer in a single column at the edge of each page. This simplifies the scoring to the extent that the whole examination can be scored in less than one minute.

Variety of test material. The form of the examinations admits of the use of a wide variety of types of questions instead of the limited number of types in the ordinary examination.

Flexible time limit. Provision is made for administering the examinations with a time limit of either 20 or 30 minutes. The 20-minute time limit may be used for general survey purposes or with normal school and college students. The 30-minute time limit should be used when time allows, as it will give a more accurate measure.

Ease of figuring IQ's. A chart is provided by which the IQ of the examinee can be found directly from the score and age in years and months merely by locating a point on the intersection of two lines. No arithmetical calculation or reference to tables is necessary.

Improved Percentile Graph. There is provided in each package of Examinations a new form of percentile graph on which percentile curves may be drawn, if desired, showing vividly the distributions of scores of any group or groups of examinees. With each percentile graph is furnished a scale chart by which the drawing of the percentile curves is reduced to the simplest terms.

Interpretation Chart. A chart is provided upon which the scores of a class or school may be plotted and the pupils divided into fast-moving, regular, and slow-moving groups and regraded within these groups, or otherwise classified, merely by drawing lines on the chart. Account is taken of mental ability, brightness, and chronological age in classifying by this method. It is not necessary to use the Interpretation Chart in order to interpret scores in these tests. However, it will be found a distinct aid and convenience.

Historical

These examinations are modeled after a group test of mental ability designed by the author in January, 1918, for use in a large commercial establishment in Connecticut. In that test the principle of self-administration was embodied, involving the single list of questions, the printed initial directions, and the provision for answers in single columns.

1. (3)
2. (20)
3. (2)
4. (G)
5. (T)
6. (4)
7. (2)
8. (5)
9. (540)
10. (2)
11. (4)
12. (3)
13. (1)
14. (4)
15. (2)
16. (4)
17. (4)
18. (8)
19. (3)
20. (31)
21. (3)
22. (1)
23. (2)
24. (2)
25. (5)

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The author is indebted to Dr. E. E. Keener, Director of Instructional Research, Chicago Public Schools, and C. Everett Myers, Research Secretary, Pennsylvania State Education Association, for assistance in standardizing Form C.

Directions for Administering

Who may administer examination. Any teacher after a little preparation can satisfactorily administer either the Intermediate or Higher Examination. The best preparation for administering either is to take it. The principal should invite his teachers to take the examination and score their own papers. Any teacher who is interested in mental-ability testing should welcome the opportunity to experience the taking of an examination, as this will give her the best appreciation of what the examination tests. Those administering an examination should realize that it is very important that conditions be uniform throughout the school and must be the same in the school being tested as in every other school where the examination has been given. For this reason, everything which needs to be said in administering the test is given below in boldface type, and the teacher should give these instructions verbatim, reading if necessary. If one teacher urges the students to work as rapidly as possible and another teacher urges them to work as carefully as possible, the results may be entirely different and not comparable. The teacher, therefore, should say nothing that is not prescribed, except to make clear the meaning of what is on the first page of the examination blank.

When to give examination. The best time to give the examination is probably at the opening of school in the morning, although the time of day probably does not have a serious effect upon the score.

Directions for administering. To administer either the Intermediate or the Higher Examination, Form A, B, C, or D, begin by addressing the students as follows:

"**We are going to give you this morning [afternoon] some new and interesting tests. We will now pass the test papers and as soon as you receive a paper you may begin to read the first page and do as it directs, filling the blanks, etc. Do not open or turn over the paper. Part of the test is to see if you can follow directions.**"

Have monitors pass the papers, one to each student, right side up. See that every student is supplied with two pencils (or a pen) and an eraser.

Allow a reasonable time for all to finish reading the first page and trying the samples. A few laggards may be disregarded. Then say, "**Is there any one who does not understand the first page?**" Give any explanations necessary to make sure that all understand what is explained on the first page.

If a time limit of 20 minutes is to be used, say, "**This will be a short test. You will be told to stop at the end of 20 minutes instead of 30. Find the number 20 in the upper left-hand corner of the page and make a ring around it.**" Be sure that all do this.

Then say, "**Now turn the page and begin,**" and note the exact time. No further instructions are necessary.

If the principal or superintendent is administering the examination, he may now leave the class in charge of the teacher or an assistant, with instructions to give no further directions and answer no questions; to stop the work at the end of exactly 30 (or 20) minutes and have the papers collected. The person in charge during the examination will do well to move quietly about the room at the beginning of the examination and see that all are indicating the answers in a proper manner. If an examinee is found who is not placing the numbers in the parentheses, he should be told to do so.

Directions for Scoring

The correct answers to the 75 items of both forms of the Intermediate and Higher Examinations are given on the margins of this manual. To score the examination, open the manual to the pages containing the answers to the form of the examination to be scored, fold open the manual and clip the pages together. Place the manual over the examination paper so that the appropriate Key is adjacent to the answers given on the examination paper. Place a check mark after each correct answer or a cross after each incorrect or omitted answer, or both checks and crosses.

If two answers are given for any one item, count the item wrong. This is quite likely to occur with Item 55 in Form A of the Higher Examination.

Number 37 in Form A and Number 57 in Form B of the Higher Examination count as wrong if the alphabet has been marked in any way.

If a paper is found in which the examinee has omitted to place the numbers in the parentheses but has otherwise indicated the answers, the scorer should write in the parentheses the numbers representing the answers of the examinee so far as these may be determined, and then score accordingly, but deduct one point from the total score for failure to follow the direction to place the numbers in the parentheses.

If the examinee has failed to make all his letters like printed capitals, score the paper as if all letters were printed capitals, but deduct one point for failure to follow the direction.

Whenever an examinee has used an irregular method of taking the examination, score the paper according to the obvious intent of the examinee and then deduct one point for each general direction not followed. Indicate such deduction by placing a −1 with a circle around it opposite the first instance where the direction has not been followed. Let his score represent the fairest measure of his ability that can be estimated.

The score in the examination is the number of correct answers. First, count up the correct answers and write the number on

75. (2)
74. (13)
73. (16)
72. (2)
71. (32)
70. (O)
69. (1)
68. (4)
67. (2)
66. (4)
65. (5)
64. (2)
63. (2)
62. (E)
61. (L)
60. (1)
59. (9)
58. (E)
57. (4)
56. (3)
55. (2)
54. (9)
53. (4)
52. (5)
27. (1)
28. (4)
29. (L)
30. ([redacted])
31. (5)
32. (3)
33. (4)
34. (3)
35. (1)
36. (2)
37. (2)
38. (4)
39. (Y)
40. (30)
41. (5)
42. (2)
43. (N)
44. (1)
45. (4)
46. (3)
47. (2)
48. (S)
49. (B)
50. (3)
51. (L)

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the margin of the last page. Then verify the score by counting the incorrect and omitted answers. Thus, suppose the number of correct answers counted is 40. Count the incorrect and omitted answers beginning 41, 42, etc., and see that you end with 75. Then enter the score in the space provided on the first page of the blank. Do not trust the counting of correct answers only, as it is very easy to make a mistake. The checking of correct answers should be gone over by a second scorer, for even the best scorers will make mistakes.

Recording Scores

The Class Record. The scores should be entered on the Class Record which is provided with each package of examination blanks. Before entering the scores, arrange the papers of a class either in alphabetical order or in the order of magnitude of the score, according to preference. Next, enter the name of each student and his age in years and months. Then enter his score in the proper column according to the time limit used. Directions for filling the remaining columns will be given under "Interpretation of Results."

20-Minute time limit. If a 20-minute time limit has been used, the scores may be transmuted into terms of 30-minute time-limit scores in order that they may be compared with norms or other 30-minute scores. This may be done by means of Table 1.

TABLE 1[1]

20-MIN.	30-MIN.	20-MIN.	30-MIN.	20-MIN.	30-MIN.	20-MIN.	30-MIN.	20-MIN.	30-MIN.
1	1	16	20	31	40	46	59	61	71
2	2	17	22	32	41	47	60	62	71
3	4	18	23	33	43	48	61	63	72
4	5	19	24	34	44	49	62	64	72
5	6	20	26	35	45	50	63	65	73
6	7	21	27	36	46	51	64	66	73
7	9	22	28	37	48	52	64	67	74
8	10	23	30	38	49	53	65	68	74
9	11	24	31	39	50	54	66	69	74
10	13	25	32	40	51	55	67	70	75
11	14	26	33	41	53	56	68	71	75
12	15	27	35	42	54	57	68	72	75
13	17	28	36	43	55	58	69	73	75
14	18	29	37	44	56	59	70	74	75
15	19	30	39	45	58	60	70	75	75

Standardization

Selection of items. In selecting items for the Intermediate and Higher Examinations, the Advanced Examination was drawn upon freely. An equal number of items of other types, some of which are new, were included in order that the examination might cover a large variety of questions and therefore afford a more comprehensive measure of mental ability. Preliminary editions containing more than enough items were administered to about 1000 high school students in Oakland, California, and Rockford, Illinois, and to 1000 grammar school pupils in Moorhead, Minnesota. These students were divided in each case into two groups, a "good group" and a "poor group." The same number were taken from each grade for both groups. The good group constituted the young students, and the poor group the old students. These groups had reached the same average educational status, therefore, but at different rates. Now it is the rate at which a student can progress through school that the mental-ability test is chiefly used to predict. Therefore this is believed to be the best criterion by which to judge the validity of each item that goes into the test. The number of times each item was passed by each group was then found and only those items chosen which showed a distinct gain in number of passes by the good group over the number of passes by the poor group in spite of the fact that the median age of the good group was over two years less than that of the poor group. Each item justified its inclusion, therefore, because it distinguished between students who progressed slowly and those who progressed rapidly.

Arrangement in order of difficulty. The items in each form of each examination have been arranged in the order of difficulty, according to the number of passes of each item by the students taking the preliminary editions.

Practice Effect

Whenever a second form of a test is given after a first form, especially when the two forms have been made very much alike, students tend to do better on the second test. The effect of the first test is generally termed "practice effect," but it may include a number of effects. Among these is general familiarity with the method, resulting in ability to get under way more quickly, lessened nervousness, memory of mode of attack of certain types of problems, etc.

A study was made of the effect of practice when a second form of the Intermediate or Higher Examination was given the next day after the first form. The average gain in the second score was 4 points in each case. Therefore in such a case 4 points would have to be subtracted from the score in the second test to make allowance for the effect of practice.

Interpretation of Results

Mental ability and brightness. There are two aspects of the mental quality of an individual which must not be confused. One is his degree of **mental ability** and the other his degree of **brightness.** The term "mental ability" refers to that innate mental quality which increases with age, whereas the term "brightness" refers to that constant quality which determines the rate of growth of the mental ability of an individual and the degree of mental ability which he will eventually reach.

Mental ability is measured by the individual's score in the test. A measure of his brightness is obtained by comparing his score with that of others of his own age. The distinction is best shown by reference to the Interpretation Chart.

The Interpretation Chart. An Interpretation Chart is provided in each package of Examinations to facilitate the interpretation of scores. Interpretation Charts for the Intermediate and Higher Examinations are given on the two sides of the same sheet. In the sample Interpretation Chart shown in Figure 1 (page 9) a point is plotted for each of the 276 pupils in Grades 5 to 8 of a grammar school. The height of each point

1. (4)
2. (2)
3. (3)
4. (2)
5. (5)
6. (3)
7. (4)
8. (2)
9. (1)
10. (4)
11. (H)
12. (2)
13. (5)
14. (2)
15. (1)
16. (3)
17. (3)
18. (9)
19. (3)
20. (2)
21. (6)
22. (4)
23. (T)
24. (2)
25. (2)
26. (1)

[1] This table was derived from a study of 20- and 30-minute scores in the Higher Examination only. It is therefore only approximate for the Intermediate Examination. It is assumed, however, that the 20-minute time limit will seldom be used with the Intermediate Examination.

represents the score of an individual in the Intermediate Examination according to the scale at the left. The horizontal position of each point represents the age of the individual according to the scale at the foot of the chart.

The normal or "average" individual of the age of just 10 years is expected to make a score of just 23 points.[1] The normal individual of the age of just 11 years is expected to make a score of just 31 points, etc., as indicated by the heavy curved line through the middle of the chart (best seen in the blank chart). This may be called the normal curve and shows the **norm** or normal score to be expected from an individual of any given age. The curve becomes level at the age of 18 years, as shown in the Interpretation Chart for the Higher Examination, and may be considered as extending to the right indefinitely beyond 18 years at the same level. The derivation of this curve will be described below.

Mental maturity. A child's mental ability increases from birth, year by year, month by month, just as does his height, until he reaches his maximum, when he is said to have reached mental maturity. The normal curve may be thought of as the curve of growth in mental ability of the hypothetical exactly normal individual.

The age at which mental maturity is reached is difficult to decide, since the amount of mental development during the last year in which there is any development is very slight. In the Interpretation Chart for the Higher Examination the age at which mental maturity is reached is taken to be 18 years.

While individuals may reach mental maturity at about the same age, they nevertheless reach it with widely differing amounts of mental ability, just as they reach mature adult stature at differing heights. The degree of mental ability at which the normal individual reaches mental maturity is also very difficult to determine, since it is not possible to obtain a large group of completely unselected individuals (chosen at random from the whole population) at the various ages between 15 and 18. The norm for adults (persons of 18 years or over), however, has been called 42 in the Higher Examination, as shown by the upper limit of the normal curve. This is the equivalent of 59 points in the Intermediate Examination. The choice of this norm for adults is only an estimate based on all available data.

Derivation of norms. The positions of the normal curves in the two charts were established according to the judgment of the author upon consideration of (1) the median scores of the various age groups among about 120,000 pupils whose scores in the Higher or Intermediate Examinations have been reported to date, (2) the median scores of the several grade groups in relation to the median ages of these grade groups, (3) the norms for the various ages obtained from the norm table for the Advanced Examination by means of tables for converting scores into terms of the Higher and Intermediate Examinations, (4) the correlations between scores in the Higher and Intermediate Examinations and mental ages by the Herring Revision of the Binet-Simon Tests, and (5) correspondence between the Intermediate and Higher Examinations themselves. The position of the normal curve in neither chart accords exactly with any of these data, but it constitutes in either case a sort of average of the various groups of data.

[1] Unless otherwise stated the score referred to is the 30-minute time-limit score.

The aim has been to establish scores which are normal for unselected age groups, not merely for public school pupils. The scores of high school students, therefore, tend to average somewhat higher than the norms.

True mental age. Originally the term "mental age" referred to the degree of mental ability which is normal for a given age. Thus, "having a mental age of 15 years" meant "having a degree of mental ability just normal for the age of 15 years." This degree of mental ability is measured by a score of 36 in the Higher Examination. Having a mental age of 17, according to this definition, meant making a score just normal for 17-year-olds, which is a score of 41. Mental ages so found may be called true mental ages. Since the score of 42 is the norm for adults (taken to mean any person of 18 years or over), there is no age for which a score above 42 is the norm; therefore, of course, no score above 42 can be expressed as a true mental age.

The term "Mental Age" (capitalized), however, has now come to have a special meaning and to denote measures of mental ability — i.e., scores — in the Binet-Simon Tests. Binet Mental Ages below about 13 years are true mental ages. Above that, especially above 16 years, they are merely scores. They are called Mental Ages merely for the sake of consistency. The Binet Mental Age of 17, for example, represents a degree of mental ability considerably above that which is normal for the age of 17 or, indeed, for any age.

The Binet Mental Age of 16 years is generally taken as the norm for adults in figuring IQ's. There is a growing opinion among psychologists, however, that the Binet Mental Age which is the norm for adults is appreciably lower than 16 years.[1] The correlations between the Binet Scale and the Higher Examination confirm this belief. The correspondence between Binet Mental Ages and Scores in the Higher Examination, as indicated in the Interpretation Chart, is based partly upon the correlation between the Higher Examination and the Herring Revision of the Binet-Simon Tests and partly upon the age norms. At any rate, Binet Mental Ages appear to express degrees of mental ability in excess of that normal for the corresponding chronological ages even below the age of 15 years. For this reason IQ's obtained by the method provided herein [2] may be slightly higher than those obtained by the Binet Scale for the older students, but it is believed that they more nearly correspond with what the Binet IQ's of these students were when they were younger.[3]

Measures of mental ability. Each of the six scales at the left side of the Interpretation Chart for the Higher Examination is a measure of mental ability. The scales are so placed that values having the same height are corresponding measures of mental ability as far as may be determined. Thus a score of 40 points in the Higher Examination with a 30-minute time limit is the equivalent of a score of 31 in the Higher Examination with a 20-minute time limit, a score of 57 in the Intermediate Examination, a score of 120 in the Advanced Examination, a Binet Mental Age of 15 years 0 months, and a T-score of 62.[4]

[1] See Lewis M. Terman, "Mental Growth and the IQ," *Journal of Educational Psychology*, September, 1921.

[2] See "Measures of brightness" below.

[3] See "Validity of Mental Age equivalents" below.

[4] For the meaning and significance of a T-score, see William A. McCall, "A Uniform Method of Scale Construction," *Teachers College Record*, January, 1921.

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Any individual whose score is plotted above the normal curve may be considered as brighter than normal, and any individual whose score is plotted below the normal curve may be considered as duller than normal.[1] The distance at any point above or below the normal curve is a measure of the brightness of the individual. A 14-year student making a score of 35 in the Higher Examination has a lesser degree of mental ability but a greater degree of brightness than a 15-year student making a score of 37.

Measures of brightness. Brightness is generally measured in terms of the Intelligence Quotient (IQ), which is customarily found by dividing the individual's Binet Mental Age by his chronological age (decimal point dropped). In the case of mental-ability tests other than the Binet Tests it is customary to give Binet Mental Age equivalents of scores in order that these may be used in finding IQ's. It has been found, however, that IQ's so derived have an appreciably wider range than those obtained by means of the Binet Tests and are therefore not comparable with the latter. Now the IQ was invented for use with the Binet Tests and should retain its original significance, or else it will become relatively meaningless. It seems that the term " Intelligence Quotient " is coming to have a legal recognition, but IQ's as sometimes derived from group tests of mental ability bear little relation to IQ's derived by the Binet Tests. It is the purpose of the author to use the term " IQ " only in its original significance.

Unless it is distinctly understood how IQ's were derived in any case, however, they should be designated by some means such as National IQ's, Otis IQ's, or Binet IQ's. The term " IQ," when not so qualified or understood, must be interpreted as referring to actual Intelligence Quotients found by means of the Binet Tests.

Validity of Mental Age equivalents. It follows from the above statements regarding the greater range of IQ's for each age group when obtained by group tests than when obtained by the Binet Tests, that Binet Mental Age equivalents are actual equivalents *for normal children only*. Thus a score of 38 in the Intermediate Examination corresponds to a Binet Mental Age of 12 years when made by a child of approximately 12 years. But if made by a 10-year child, for example, it represents a Binet Mental Age of only 11½ years, since according to the chart a 10-year child making a score of 38 has an IQ of only 115. This lack of constant correspondence between scores and Binet Mental Ages is inherent in all group tests and is due to the lesser accuracy of group tests. This phenomenon seems not to be generally appreciated, as witnessed by the now prevalent custom of converting scores into Binet Mental Age equivalents. There is no Binet Mental Age equivalent of a score in any group test of mental ability which is valid for all ages of individuals. For that reason it is believed that the most scientific method of obtaining IQ's from scores in group tests, which are comparable with Binet IQ's, is by comparison of the variabilities of scores of individuals of the various age groups in the group test and in Binet Tests, as described below.

Mental Age equivalents as such are not necessary to the use of the Higher or Intermediate Examinations. Scores are quite sufficient as measures of mental ability and IQ's as measures of brightness. IQ's can be obtained from scores in the Otis Self-Administering Tests without Mental Age equivalents.

In order to compare scores with Mental Age equivalents of scores in other group tests or to find IQ's comparable with those obtained from other group tests, however, Binet Mental Age equivalents are given to scores in both examinations. These may be obtained from the Interpretation Chart for the Higher Examination. Binet Mental Age equivalents of scores in the Intermediate and Higher Examinations are given also in Tables 2*a* and 2*b*.

TABLE 2*a*

BINET MENTAL AGE EQUIVALENTS OF SCORES IN THE INTERMEDIATE EXAMINATION

SCORE	MA	SCORE	MA	SCORE	MA	SCORE	MA	SCORE	MA
1	7– 4	16	9– 0	31	11– 0	46	13– 1	61	15–11
2	7– 5	17	9– 2	32	11– 2	47	13– 3	62	16– 1
3	7– 6	18	9– 3	33	11– 3	48	13– 5	63	16– 3
4	7– 7	19	9– 5	34	11– 5	49	13– 7	64	16– 6
5	7– 8	20	9– 7	35	11– 6	50	13–10	65	16– 8
6	7– 9	21	9– 8	36	11– 8	51	14– 0	66	16–11
7	7–10	22	9–10	37	11–10	52	14– 2	67	17– 2
8	7–11	23	10– 0	38	12– 0	53	14– 4	68	17– 5
9	8– 0	24	10– 1	39	12– 1	54	14– 6	69	17– 8
10	8– 2	25	10– 3	40	12– 2	55	14– 8	70	17–10
11	8– 4	26	10– 4	41	12– 4	56	14–10	71	18– 0
12	8– 5	27	10– 6	42	12– 6	57	15– 0	72	18– 3
13	8– 7	28	10– 7	43	12– 8	58	15– 2	73	18– 5
14	8– 9	29	10– 9	44	12–10	59	15– 5	74	18– 7
15	8–11	30	10–10	45	12–11	60	15– 8	75	18– 9

TABLE 2*b*

BINET MENTAL AGE EQUIVALENTS OF SCORES IN THE HIGHER EXAMINATION

SCORE	MA	SCORE	MA	SCORE	MA	SCORE	MA	SCORE	MA
1	7–10	16	10– 8	31	13– 5	46	16– 0	61	17–11
2	8– 0	17	10–10	32	13– 7	47	16– 2	62	18– 0
3	8– 2	18	11– 0	33	13–10	48	16– 3	63	18– 2
4	8– 4	19	11– 3	34	14– 0	49	16– 5	64	18– 3
5	8– 6	20	11– 5	35	14– 2	50	16– 6	65	18– 5
6	8– 9	21	11– 7	36	14– 4	51	16– 8	66	18– 6
7	8–11	22	11–10	37	14– 6	52	16– 9	67	18– 8
8	9– 2	23	12– 0	38	14– 8	53	16–10	68	18– 9
9	9– 4	24	12– 2	39	14–10	54	17– 0	69	18–11
10	9– 7	25	12– 4	40	15– 0	55	17– 2	70	19– 0
11	9– 9	26	12– 6	41	15– 2	56	17– 3	71	19– 2
12	10– 0	27	12– 8	42	15– 4	57	17– 5	72	19– 3
13	10– 2	28	12–10	43	15– 6	58	17– 6	73	19– 4
14	10– 4	29	13– 0	44	15– 8	59	17– 8	74	19– 5
15	10– 6	30	13– 3	45	15–10	60	17– 9	75	19– 6

Age norms. The norms in the Intermediate or Higher Examination for the various ages may be read from the appropriate Interpretation Chart by noting the points at which the normal curve cuts the vertical age lines, or may be taken from Table 3 or Table 4.

1. (4)
2. (2)
3. (3)
4. (2)
5. (2)
6. (3)
7. (3)
8. (3)
9. (3)
10. (H)
11. (1)
12. (W)
13. (8)
14. (4)
15. (1)
16. (5)
17. (40)
18. (3)
19. (4)
20. (5)
21. (7)
22. (5)
23. (5)
24. (4)
25. (3)
26. (4)

[1] Here "normal" means exactly median in brightness. The term "normal," however, is often used to refer to all individuals whose scores are reasonably close to the norms for their respective ages.

TABLE 3

AGE NORMS IN INTERMEDIATE EXAMINATION (30-MINUTE TIME LIMIT)

YEARS		8	9	10	11	12	13	14	15	16	17	18 or over
MONTHS	0	7	15	23	31	38	44	49	53	56	58	59
	1	8	16	24	32	39	44	49	53	56	58	
	2	8	16	24	32	39	45	50	53	56	58	
	3	9	17	25	33	40	45	50	54	57	58	
	4	10	18	26	34	40	46	50	54	57	58	
	5	10	18	26	34	41	46	51	54	57	58	
	6	11	19	27	35	41	46	51	55	57	59	
	7	12	20	28	35	42	47	51	55	57	59	
	8	12	20	28	36	42	47	52	55	58	59	
	9	13	21	29	36	43	48	52	55	58	59	
	10	14	22	30	37	43	48	52	56	58	59	
	11	14	22	30	37	43	49	53	56	58	59	

TABLE 4

AGE NORMS IN HIGHER EXAMINATION (30-MINUTE TIME LIMIT)

YEARS		12	13	14	15	16	17	18 or over
MONTHS	0	23	28	32	36	39	41	42
	1	24	28	32	36	39	41	
	2	24	29	33	37	39	41	
	3	25	29	33	37	40	41	
	4	25	29	33	37	40	41	
	5	25	30	34	37	40	41	
	6	26	30	34	38	40	42	
	7	26	30	34	38	40	42	
	8	27	31	35	38	40	42	
	9	27	31	35	38	41	42	
	10	27	31	35	39	41	42	
	11	28	32	36	39	41	42	

Norms for college students. The scores of 2516 college students in the Higher Examination have been reported to date from 21 colleges and universities. Ten of the 21 used 20-minute time limits. Reducing all the scores to a 30-minute basis, the median score of these 2516 students is 53 points. The median scores of the 21 colleges and universities were as follows (30-minute time limit): 37, 39, 45, 46, 51, 51, 52, 53, 53, 54, 55, 55, 56, 56, 57, 59, 61, 62, 62, 64, and 65.

Various percentile scores of the 2516 college students are shown in Table 5.

TABLE 5

SHOWING VARIOUS PERCENTILE SCORES OF 2516 COLLEGE STUDENTS IN THE HIGHER EXAMINATION

	(Lowest)				(Median)				(Highest)
Percentile	0	3	10	25	50	75	90	97	100
20-MINUTE BASIS	16	25	30	36	41	49	55	61	75
30-MINUTE BASIS	20	32	39	46	53	62	67	71	75

Derivation of IQ Scale. According to Dr. Terman,[1] IQ's found by the Stanford Revision of the Binet-Simon Tests are distributed very closely in accordance with the law of normal distribution and with the middle 50 per cent falling within the range of IQ's from 92 to 108.

Due partly, no doubt, to the form of the Intermediate and the Higher Examinations, the steps in difficulty between items being smaller in the first part of each examination than in the last part, the distributions of scores of the several age groups have approximately the same variability, as far as can be determined. These distributions tend to be approximately normal, and are such that the middle 50 per cent of scores of each age group tend to fall within 8 points above and below the norm for that age. Fortunately, therefore, each point in the score of an individual above or below the norm for his age represents a point in IQ above or below 100. If an individual's score exceeds the norm for his age by 12 points, his IQ is 112.

How to find the IQ of an individual. The IQ of an individual may be found in either of two ways. One is as follows: Add to 100 the number of points by which a pupil's score exceeds the norm for his age, or subtract from 100 the number of points by which a pupil's score falls below the norm for his age. A simple and easy way to obtain the same result is to add 100 to the score of the individual and subtract from this sum the score which is the norm for his age. (The norm for individuals over 18 years may be taken as 42 points in the Higher Examination and as 59 points in the Intermediate Examination.) Thus, if a 15-year student's score in the Higher Examination is 34, the norm for his age being 36, his IQ is $34 + 100 - 36 = 98$.

A second method of finding an IQ is to plot the score of the individual in the appropriate Interpretation Chart by placing a dot on the horizontal line representing his score and on the vertical line representing his age. If the dot falls on a curve, the IQ of the individual will be stated at the end of the curve in the IQ column at the right. Thus, if a student of 15 years, 4 months, makes a score of 31 in the Higher Examination, his IQ is 94. If the point falls between two curves, the IQ may be estimated closely enough by noting its position relative to the curve above or below.

The IQ of each student may be entered after his name on the Class Record, in the column headed "IQ."

Index of Brightness. A measure of brightness used in connection with the Otis Group Intelligence Scale is the Index of Brightness. The relation between IQ's obtained by the Higher Examination and the Index of Brightness as found by the Advanced Examination is shown in the IQ and IB columns in the Interpretation Chart. This same correspondence holds good for IQ's obtained by the Intermediate Examination. If IQ's are used, it is not necessary to find IB's. Both IQ's and IB's serve the same purpose.

Percentile Rank. Another measure of brightness is called the "Percentile Rank." If a student exceeds 75 per cent of unselected individuals of his own age in score, he is said to have a Percentile Rank (PR) of 75, and the same for any other per cent. The scale of Percentile Ranks extends, therefore, from 0 to 100. A PR of 50 represents exact normality and corresponds to an IQ or IB of 100.

[1] L. M. Terman, *Measurement of Intelligence* (Houghton Mifflin Company, Boston), page 79.

27. (4)
28. (4)
29. (2)
30. (1)
31. (3)
32. (2)
33. (5)
34. (5)
35. (360)
36. (4)
37. (T)
38. (F)
39. (3)
40. (120)
41. (M)
42. (1)
43. (O)
44. (36)
45. (50)
46. (3)
47. (3)
48. (5)
49. (4)
50. (3)
51. (6)
52. (1)

75. (8)
74. (3)
73. (4)
72. (6)
71. (2)
70. (R)
69. (3)
68. (4)
67. (5)
66. (9)
65. (10)
64. (M)
63. (3)
62. (4)
61. (45)
60. (243)
59. (3)
58. (G)
57. (4)
56. (33)
55. (5)
54. (2)
53. (2)
Page 4
Higher Form A
KEY

Assuming distributions of scores for the various age groups to be in accord with the law of normal distribution, the Percentile Rank of an individual may be found from his IQ or IB by reference to the PR column at the right of the Interpretation Chart for the Higher Examination. This correspondence holds also between IQ's, IB's, and PR's for the Intermediate Examination. If desired, the student's PR may be entered also on the Class Record. This is optional.

Grade status. Table 6 shows the grade status corresponding to various 30-minute scores in the Intermediate and Higher Examinations. For example, a score of 11 in the Intermediate Examination is a grade status of 3.5 — that is, it is the norm for the end of the fifth month of the third grade; a score of 30 in the Higher Examination is the norm for the beginning of the eighth grade. These values are based on the tables of norms and Table 31 of *Statistical Method in Educational Measurement* (World Book Company).

Tables 7, 8, and 9 show the distributions of scores in the Intermediate and the Higher Examinations. Similar data have been compiled for the other grades but cannot be given for lack of space.

TABLE 6 (*Revised*)

Intermediate Examination						Higher Exam.	
Score	Grade Status	Score	Grade Status	Score	Grade Status	Score	Grade Status
11	2.8	26	4.8	41	6.8	30	8.1
12	3.0	27	4.9	42	7.0	31	8.3
13	3.2	28	5.0	43	7.2	32	8.5
14	3.3	29	5.1	44	7.4	33	8.8
15	3.4	30	5.2	45	7.6	34	9.1
16	3.5	31	5.4	46	7.9	35	9.4
17	3.6	32	5.5	47	8.1	36	9.7
18	3.7	33	5.6	48	8.3	37	10.0
19	3.9	34	5.8	49	8.5	38	10.3
20	4.0	35	5.9	50	8.8	39	10.7
21	4.1	36	6.0	51	9.1	40	11.0
22	4.3	37	6.2	52	9.4	41	11.4
23	4.4	38	6.3	53	9.7	42	11.8
24	4.5	39	6.4	54	10.0	43	12.2
25	4.7	40	6.6	55	10.3	44	12.6

TABLE 7

Showing Distribution of Scores of 24,724 Pupils in the 6th Grade in the Intermediate Examination

Score	Age 9 to 9–11	10 to 10–11	11 to 11–11	12 to 12–11	13 to 13–11	14 to 14–11	15 to 15–11	16 or over	Totals
75			1						1
70–74		3	19	8					30
65–69		31	116	49	10	6			212
60–64	1	66	344	193	28	2	3		637
55–59	3	97	551	336	87	24	5	1	1104
50–54	3	142	912	586	197	79	21		1940
45–49	7	183	1130	1084	340	138	34	7	2923
40–44	6	162	1193	1061	491	208	50	11	3182
35–39	6	207	1221	1241	668	280	106	11	3740
30–34	9	155	1003	1180	761	338	150	24	3620
25–29	7	115	784	935	700	360	171	27	3099
20–24		83	457	612	556	328	179	8	2223
15–19	1	34	241	341	353	220	117	26	1333
10–14	1	7	75	134	150	89	58	14	528
5–9		2	11	27	25	31	23	6	125
0–4			6	7	4	4	4	2	27
Totals	44	1287	8064	7794	4370	2107	921	137	24724

Median age: 12 yr. 5 mo. Median score: 41.

TABLE 8

Showing Distribution of Scores of 35,278 Pupils in the 8th Grade in the Intermediate Examination

Score	Age 11 to 11–11	12 to 12–11	13 to 13–11	14 to 14–11	15 to 15–11	16 to 16–11	17 to 17–11	18 or over	Totals
75		1	3	6	1				11
70–74	14	96	303	182	48	9			652
65–69	28	324	1177	740	213	50	4		2536
60–64	53	227	1710	1327	432	93	10		3852
55–59	39	426	1828	1753	732	168	16	2	4964
50–54	44	441	1771	1933	1025	219	42	2	5477
45–49	22	313	1468	1822	1102	295	54	2	5088
40–44	28	253	1187	1567	1052	313	38	6	4444
35–39	26	197	790	1122	849	268	50	10	3312
30–34	16	139	513	820	605	237	28	6	2364
25–29	9	76	244	393	423	160	28	2	1335
20–24	9	38	146	242	221	106	28	10	800
15–19	1	17	60	102	63	50	4		297
10–14		7	12	33	28	13	4		97
5–9	2	1	10	5	7	4			29
0–4			2	6	9	3			20
Totals	301	2556	11224	12053	6810	1988	306	40	35278

Median age: 14 yr. 3 mo. Median score: 49.

TABLE 9

Showing Distribution of Scores of 15,715 Pupils in the 12th Grade in the Higher Examination

Score	Age 14 to 14–11	15 to 15–11	16 to 16–11	17 to 17–11	18 to 18–11	19 to 19–11	20 or over	Totals
75	1		1					2
70–74		5	19	11	5	2	1	43
65–69	2	31	78	128	43	10	4	296
60–64	4	40	283	312	123	31	11	804
55–59	3	75	465	454	227	62	23	1309
50–54	10	125	628	970	484	147	52	2416
45–49	7	96	770	1247	462	219	76	2877
40–44	4	78	532	1280	750	227	92	2963
35–39		40	415	960	686	268	101	2470
30–34	1	28	211	495	455	172	66	1428
25–29		10	85	213	216	112	43	679
20–24		1	27	85	97	60	17	287
15–19		5	11	31	27	18	5	97
10–14			4	10	5	3	5	27
5–9				5	4	4		13
0–4				1	1	2		4
Totals	32	394	3529	6202	3585	1337	496	15715

Median age: 17 yr. 7 mo. Median score: 44.

1. (3)
2. (30)
3. (4)
4. (2)
5. (1)
6. (2)
7. (14)
8. (4)
9. (3)
10. (2)
11. (5)
12. (6)
13. (3)
14. (1)
15. (240)
16. (4)
17. (1)
18. (4)
19. (5)
20. (4)
21. (8)
22. (2)
23. (2)
24. (5)
25. (2)
26. (2)

Application of Results

Purposes of mental-ability tests. The chief administrative purposes for which mental-ability tests are given are: (1) the division of the pupils of a grade or the students of a class into more homogeneous divisions, usually in order that instruction of different degrees of enrichment may be given, (2) the regrading of pupils so that the pupils of each grade are more homogeneous in mental ability and are therefore more easily taught together, (3) the division of pupils of a school into groups which will progress at different rates.

The reader should consult *Intelligence Tests and School Reorganization*, by L. M. Terman and others (World Book Company), for a detailed discussion of the purposes and uses of tests of mental ability in regrading and classifying.

Division of classes. If it is desired to divide the students of a class into more homogeneous groups for instruction purposes, this may be done either on the basis of score or on the basis of IQ. Division on the basis of score would be made as follows:

Classification according to score. Find the distribution of the scores of the class. If the scores are plotted on the Interpretation Chart, this may be done by placing in the column under "Totals" at the left the number of dots on each horizontal line. (If desired, the frequencies of the various class intervals, 0–4, 5–9, etc., may be entered in the same column. These will be used in drawing a percentile curve on the Percentile Graph.) By means of this distribution the class may be divided into any number of divisions for differentiated instruction. Thus, let us suppose it is desired to divide a class into three divisions, A, B, and C, on the basis of score. This would be done as follows: Count down the distribution until one third the total number of scores has been counted. At this point draw a line across the distribution to mark the lower limit of score of Group A. Next count down another third and draw another line marking off Group B from Group C. Referring now to the Class Record, where each student's score appears opposite his name, the division designation, A, B, or C, may be placed opposite each student's name in the column headed "Classification."

This method is illustrated in the sample Interpretation Chart in Figure 2. Here 105 9th-year students are divided into three classes of 35 students each on the basis of score.

Classification according to brightness. If it is desired to divide the students of a class into divisions on the basis of brightness, this may be done by dividing the distribution of IQ's in the same way as suggested above for dividing the distribution of scores. To find the distribution of IQ's, count the dots between each two adjacent curves, including those which touch the lower but not the upper curve. Place the number of dots in the column headed "Totals" at the right, as shown in the sample charts. As a check on accuracy in counting the dots, it will be well to add these numbers and see that the sum corresponds to the number of students in the class.

Considerations governing method of classification. Two methods of classification have been described. Which should be used? It will be found that the dispersion of scores of any age group is so great in comparison with the rather narrow range of age norms for high school ages, that the resulting classifications by the two methods are very nearly the same. Even when classified by IQ, the superior division consists of students whose scores are nearly all higher than those of the next division, etc. It remains for further research to discover which is the better method. It is possible that if the classification is made for the purpose of determining groups which will cover the curriculum of the high school in different amounts of time, classification on the basis of IQ may be the better method, whereas if it is to establish sections which will take work of differing degrees of intensity, classification on the basis of score may be the better.

Regrading. If it is felt that the pupils of a school are very badly graded, so that the 6th grade, for example, is believed to contain some pupils who could do satisfactory work in the 7th or 8th grade and some who should be in the 5th grade to do the best work, the pupils may be regraded on the basis of score in a mental-ability test. The ideal grading would be that in which the pupils of the 6th grade all make scores higher than those in the 5th grade and lower than those in the 7th grade, etc. Practically this is impossible.

The next best procedure is to select those pupils from the 6th grade who make very high or very low scores and to promote or demote these. No hard and fast rule can be laid down for this. The number of pupils to be shifted depends partly on the amount of overlapping of ability between grades and partly on the character of the instruction possible in the school. Where relatively individual instruction is possible, homogeneous grouping is not so essential. It is probably best to begin regrouping slowly, taking first those whose scores deviate most from the median score of the grade and whose scholarship in the judgment of the teacher accords with their scores, and promoting or demoting these pupils one grade or one-half grade. If conditions warrant or seem to require it, they may be further promoted or demoted later. Later, also, more pupils may be regraded, until by degrees the grades will become more nearly homogeneous.

Multiple-track plan. A plan of school organization called the "multiple-track plan," in use in Oakland, California, and elsewhere, is one in which the pupils of the school are divided into groups (generally three, sometimes five) which progress at different rates. Thus there may be fast-moving, normal, and slow-moving classes, covering the first eight grades in say 7, 8, and 9 years, respectively.

A situation illustrating the need of reclassification is that shown in the sample Interpretation Chart in Figure 1. In this chart are plotted the scores of 276 pupils in Grades 5 to 8 of a grammar school. The scores of the different grades are plotted by different marks. It will be seen that the different grades overlap very markedly. Each grade contains both young pupils making high scores, who are therefore very bright, and old pupils making low scores, who are therefore very dull.

Division of pupils into groups to progress at different rates should be made on the basis of brightness. It is recommended by Terman that the brightest 15 per cent of the pupils of a school be placed in fast-moving classes (where numbers permit) and the dullest 15 per cent in slow-moving classes. The selection of these pupils should be made, therefore, on the basis of IQ (or IB or PR). A convenient method of making the division is illustrated in Figure 1 in the case of the 276 pupils. Of this number 15 per cent is about 40. Therefore the brightest 40 (according to IQ) should be placed in the fast-moving group and the dullest 40 in the slow-moving group.

The method of making the division by means of the chart

KEY

Higher Form B

Page 2

1. (3)
2. (20)
3. (3)
4. (G)
5. (T)
6. (2)
7. (2)
8. (2)
9. (450)
10. (4)
11. (4)

• o × △ INTERPRETATION CHART. For Intermediate Examination

Grades plotted 5th, 6th, 7th and 8th ... Number 276 ... Form used A ... Time limit 30 ... min. Date Oct. 1 ... 1922

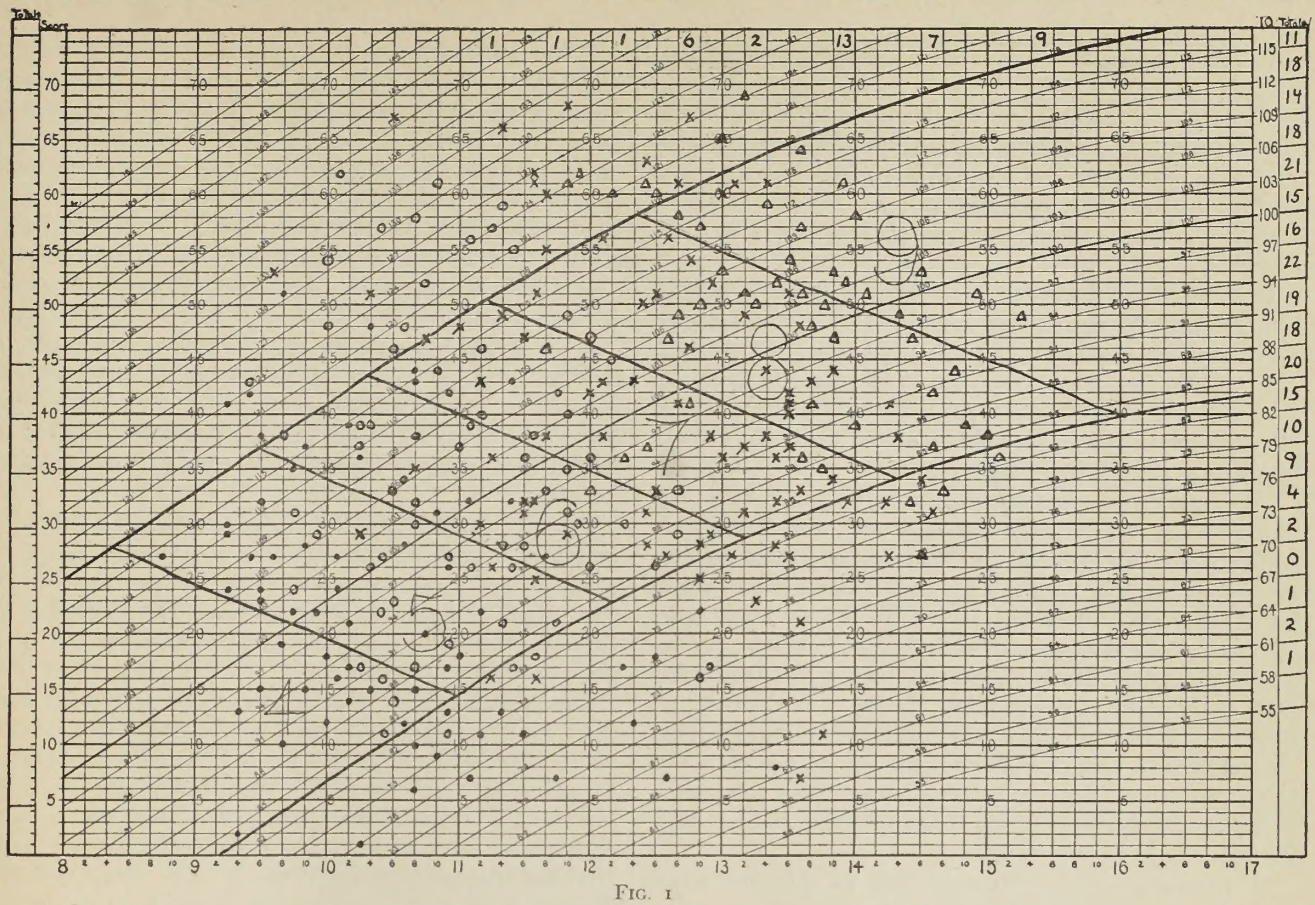


FIG. 1

12. (6)
13. (5)
14. (3)
15. (3)
16. (4)
17. (3)
18. (8)
19. (3)
20. (17)
21. (4)
22. (1)
23. (2)
24. (2)
25. (5)

INTERPRETATION CHART. For Higher Examination

Classes plotted Ninth Year ... Number 105 Form used A ... Time limit 30 ... min. Date Oct. 1 ... 1922

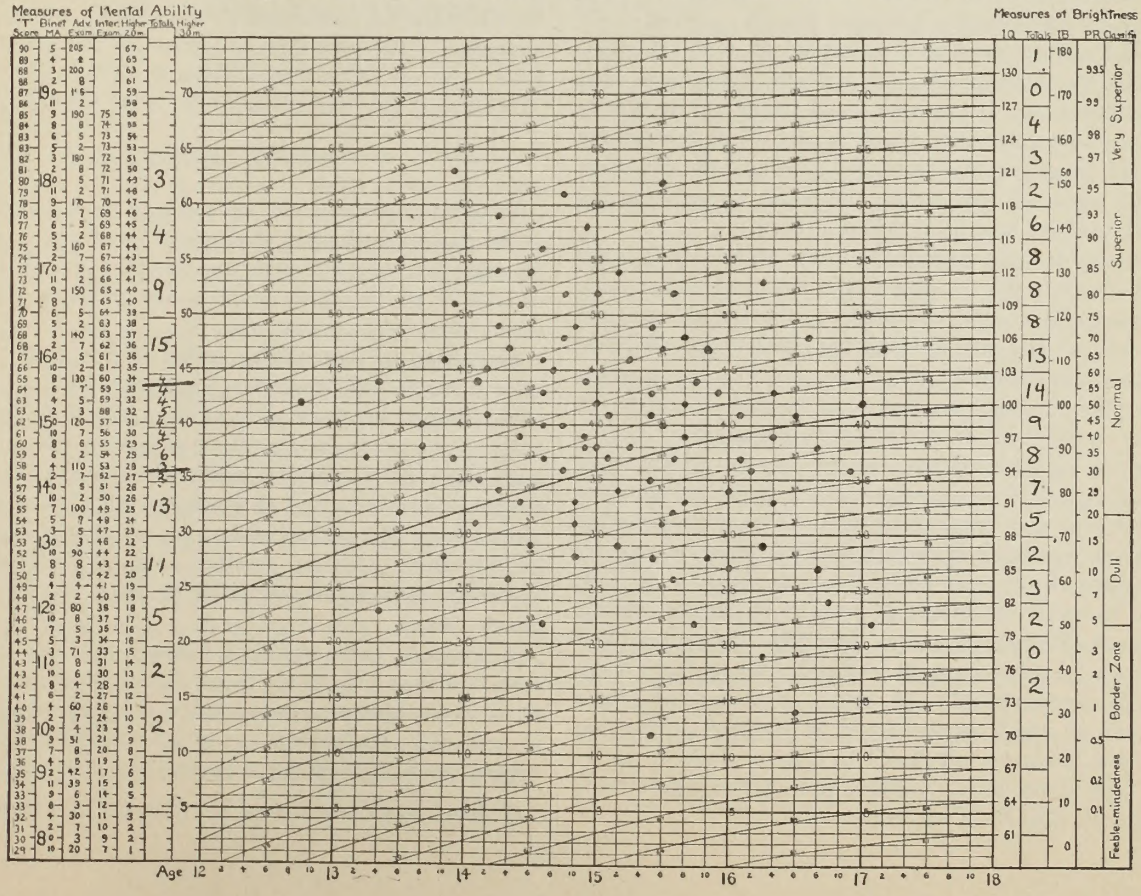


FIG. 2

is as follows: Find the curve which separates the upper 40 cases according to IQ. If no curve cuts off approximately 40 cases, draw a curve which does, making it parallel to the printed curves. The pupils whose scores are plotted above this curve should be placed in the fast-moving class. Similarly find or draw a curve which separates the lower 40 cases according to IQ. The pupils whose scores are plotted below this curve should be placed in the slow-moving group.

Grading within the group. The pupils of the three groups, fast-moving, normal, and slow-moving, are still to be graded. Ideally this would be done on the basis of score. Thus, if the 196 pupils in the normal group are to be placed in Grades 5, 6, 7, and 8, the lowest fourth or 49, according to score, would be placed in the 5th grade, the next 49, according to score, would be placed in the 6th grade, etc.

This would result, however, in placing in one grade pupils who, although very homogeneous as to score, had a very wide range of ages. The pupils of the 6th grade, for example, according to this plan, might range in age from a little over 9 years to nearly 16 years. Practically, therefore, it may seem more desirable to take some account of the age of the child. A very simple way to do this is by drawing lines across the middle band of the chart at a slight slant instead of horizontally, as shown in Figure 1; in this way age is automatically taken account of. The pupils represented by the dots in each area so marked out, while somewhat less homogeneous as to score, are much more homogeneous as to age. The greater the slant, the more weight is given to age.

In the sample chart provision is made for skipping certain pupils into the 9th grade, demoting others into the 4th grade, and dividing the remaining pupils into four groups of 40 each which would be placed in the 5th, 6th, 7th, and 8th grades.

If the slanting-line method is used, the dots plotted in the Interpretation Chart must be identified, or else it will be necessary to plot the score of each pupil again to determine in what grade he should be. It has been found feasible to do this by numbering the pupils consecutively on the Class Record and writing each pupil's number in small figures near the dot representing his score. If this is done, the pupils whose scores fall within a given area may be identified at once.

The number of cases represented in the sample chart is too small to illustrate the division of the fast- and slow-moving groups into grades — and, indeed, in a school of this size the establishment of fast- and slow-moving classes would doubtless entail grave administrative difficulties; but in a school where there are many more pupils, this would be done in exactly the same way as shown in the case of the normal group.

It must be remembered that the classification which would be effected by any of the above methods is rather in the nature of a goal to be worked toward gradually. It is doubtful whether it would ever be wise to reorganize a school completely on any of these plans at one time, especially on the basis of one test. It would be better, doubtless, to promote or demote extreme cases, as explained above, and as these show themselves to be properly placed others may be shifted. The teachers' independent judgments should weigh equally with the test results in determining which pupils should be regraded or in what grade any individual pupil should be placed. Indeed, the regrading should be done according to the judgment of the teachers *in the light of the test results*.

Educational and vocational guidance. In advising a young high school student regarding his educational future or his vocation, his degree of brightness should be considered. It seems probable that an entering student with a PR of 90 or higher may safely be permitted to attempt to finish high school in $3\frac{1}{2}$ or even 3 years. A student with a PR of 50 or less should certainly be prevented from attempting more than the regular course. Any one interested in research will do well to investigate the degree of brightness necessary to complete successfully the high school in $3\frac{1}{2}$ or 3 years.

A boy or girl having a PR of 75 or over may be safely encouraged to go to college. Doubtless many whose PR's are between 50 and 75 will succeed in college if industrious. A boy or girl whose PR is less than 25 probably should be dissuaded from going to college. Here again there is need of research.

Similarly the degree of brightness of a student should be considered in advising him regarding a vocation. Bright students should be encouraged to enter the professions. Dull ones should be helped to choose a trade. The Stenquist Mechanical Aptitude Tests[1] may help to discover the proper trend of a boy's education.

Classification Test. If it is desired to give a general achievement test in any grade from the fourth to the ninth in addition to the Intermediate Examination, it is recommended that the Classification Test[1] be used. The Classification Test is a combination of the Intermediate Examination and a general achievement test covering reading, arithmetic, spelling, grammar and diction, geography, history and civics, literature, vocabulary, physiology and hygiene, and general information, including music and art. Form A of the Classification Test contains Form A of the Intermediate Examination, and Form B of the Classification Test contains Form B of the Intermediate Examination. The time limit on each of the two parts is one-half hour. The correlation of the Classification Test and the Stanford Achievement Test was found by Dr. E. E. Keener to be .83.

The Percentile Graph

In order to compare the score of any pupil with the scores of the class as a whole or to compare two or more classes, the most effective way is to draw a percentile curve for each grade or class on the Percentile Graph, a copy of which is included in each package of Examinations.

Definition of percentile curve. A percentile curve is a smooth line having a horizontal length representing 100 per cent of the scores of any group of individuals and so drawn that any point on the curve has a height representing the amount of a given score and a horizontal position on the graph representing the per cent of the scores of the group that is exceeded by the given score. The method of drawing a percentile curve is given in full below. One not familiar with percentile curves will appreciate their significance after studying the directions for drawing them.

A percentile curve shows at a glance not only the median score of a class but also the range and variability of the scores. It shows at a glance just what per cent of the scores of the class is exceeded by the score of any given individual and just what per cent of the class attains or exceeds any given score. Two or

[1] Published by World Book Company, Yonkers-on-Hudson, New York.

(16) 75.
(4) 74.
(3) 73.
(15) 72.
(5) 71.
(R) 70.
(3) 69.
(2) 68.
(7) 67.
(12) 66.
(5) 65.
(L) 64.
(3) 63.
(4) 62.
(60) 61.
(128) 60.
(5) 59.
(8) 58.
(4) 57.
(21) 56.
(5) 55.
(4) 54.
(2) 53.

(4) 27.
(3) 28.
(2) 29.
[redacted]
(1) 30.
(5) 31.
(5) 32.
(4) 33.
(2) 34.
(270) 35.
(5) 36.
(X) 37.
(L) 38.
(4) 39.
(75) 40.
(M) 41.
(1) 42.
(N) 43.
(28) 44.
(90) 45.
(3) 46.
(5) 47.
(1) 48.
4[redacted]4)
(3) 50.
(6) 51.
(1) 52.

more curves on the same graph show very vividly the amount of overlapping of the scores of different classes.

Directions for Drawing a Percentile Curve

General procedure. The steps taken in drawing the percentile curve are: (1) distributing the scores, (2) finding the subtotals — number of cases to and including those in each class interval, (3) reducing these subtotals to per cents of the number of cases in the group, (4) locating points in the graph representing these per cents, and (5) drawing a smooth curve through these points.

Provision is made for distributing the scores of two groups of individuals on one Percentile Graph sheet, and from these distributions two percentile curves may be drawn. This does not mean, however, that only two curves may be drawn on one graph. The scores of additional groups may be distributed on other Percentile Graph sheets or any sheet of paper and as many curves drawn on one graph as may be conveniently distinguished.

Distributing the scores. In one of the columns headed "Tallying," distribute the scores of a class by putting a short mark opposite the interval of score within which the score of each individual falls. The sample Percentile Graph (Fig. 3) shows that in the freshman class two individuals had scores between 60 and 64, two had scores between 55 and 59, five had scores between 50 and 54, etc. If the scores of a class have been plotted on an Interpretation Chart, the number of scores falling within each interval of score may be copied directly on to the Percentile Graph sheet in figures, as shown in the sample in the case of the sophomore class. This will save distributing the scores again. The number of tallies or the figure in the Tallying column which tells the number of scores falling within any given interval of scores is called a "frequency." The frequency of freshman scores between 45 and 49, for example, is 8.

Finding the subtotals. Begin at the bottom of the column of frequencies and place in the square to the right of each frequency the sum of the frequencies up to and including those in that group. In the "Subtotal" column, under "Freshman," there is 1 score in the first interval, a subtotal of 2 to and including the second interval, a subtotal of 4 to and including the third interval, etc., and 50 to and including the last interval. This last "subtotal" (50) should equal the number of students in the class, as entered at the top of the column.

Reducing subtotals to per cents. In the column headed "Per cents," write opposite each subtotal the per cent that subtotal is of the whole number of students in the class. In the sample, under Freshman, 1 is 2 per cent of 50, 2 is 4 per cent of 50, 4 is 9 per cent of 50, etc., and 50 is 100 per cent of 50.

It is not necessary to reduce subtotals to per cents when use is made of the Scale Chart printed on the back of the Percentile Graph. The manner of using the Scale Chart is given below.

Locating points in the graph. First place a dot at the left edge of the graph on the horizontal line representing the lower limit of the lowest class interval containing a score. Next, place on the next line above, a dot having a distance to the right of the left margin of the graph equal to the first number in the per cents column, according to the scale at the foot of the graph. (In the sample the second dot in the percentile curve for the freshmen is placed 2 units from the edge of the graph.) Next, place on the next line above, a dot having a distance to the right of the margin representing the next per cent, etc. (The third dot represents 4 per cent, etc., and the last dot represents 100 per cent.)

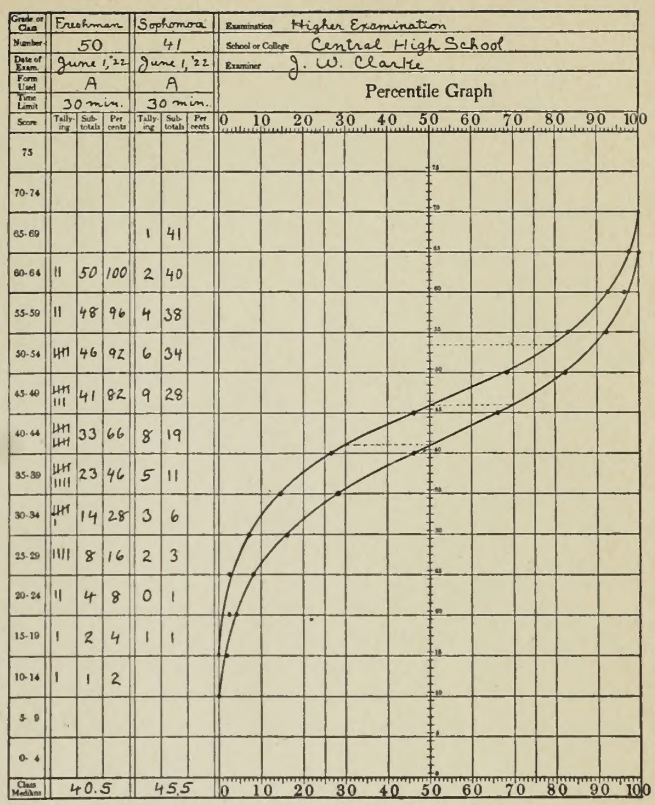


FIG. 3

Use of Scale Chart. The Scale Chart on the back of the Percentile Graph is provided to simplify the process of plotting the points in the graph. It is used as follows: Let us take the case of the freshman class, there being 50 students in the class. Find Scale 50 on the Scale Chart according to the numbers at the right. This line is divided into exactly 50 equal parts by the slanting lines in the chart. Each space, therefore, represents $\frac{1}{50}$ or 2 per cent of the width of the graph. The second dot in the freshman percentile curve is to be placed just $\frac{1}{50}$ of the distance to the right of the margin. This is just 1 space on Scale 50. The third dot is to be placed just 2 spaces to the right of the margin, the fourth point just 4 spaces to the right of the margin, etc., according to Scale 50 in the Scale Chart. By the use of Scale 41 the points have been plotted in the same way for the sophomore class.

By folding the Scale Chart on the proper scale and applying it to the Percentile Graph,[1] the width of the graph may be divided into any number of equal parts from 40 to 100. By letting 2 or 4 graduations represent 1 unit or letting 1 graduation represent 2 units, the width of the graph may be divided into any number of equal parts from 10 to 200.

Drawing the curve. Draw a smooth curve through the dots plotted as described above. This is the percentile curve.

Finding median score of class. The point where the percentile curve cuts the 50-percentile line represents the median

[1] If only one Percentile Graph is at hand, the proper distances may be transferred from the Scale Chart on the back by means of a strip of paper.

1. (3)
2. (15)
3. (4)
4. (2)
5. (3)
6. (1)
7. (14)
8. (2)
9. (5)
10. (2)
11. (3)
12. (5)
13. (2)
14. (2)
15. (240)
16. (4)
17. (3)
18. (1)
19. (3)
20. (2)
21. (6)
22. (2)
23. (4)
24. (3)
25. (4)
26. (2)

score of the group.[1] This may be read on the vertical scale along the 50-percentile line. The median scores of the freshman and sophomore classes in the sample are 40.5 and 45.5, respectively. These medians may be entered at the foot of the data columns as shown.

Finding variability of scores. The points at which the curve cuts the 25 and 75 percentile lines represent the lower and upper quartile scores of a distribution. The interval between these is the interquartile range — a very convenient measure of the scatter of the distributions. In the sample Percentile Graph the interquartile ranges for the two classes are about 14 points each (freshmen, 33.5 to 47, and sophomores, 39 to 53).

Overlapping of classes. It will be seen by a glance at the percentile curves that the sophomore class is only slightly better than the freshman class and that the distributions of scores of the two classes overlap very markedly. A convenient way to express this overlapping is to say that 30 per cent of the sophomore class fall below the median of the freshman class, or that 30 per cent of the freshman class exceed the median of the sophomore class.

Percentile rank in class. If an individual makes a score exceeding 25 per cent of the scores of his class, he is said to have a percentile rank of 25 in his class; and the same for other percentages. The percentile rank of any individual among the members of his class may be found from the percentile curve representing the scores of his class as follows: Suppose an individual in the sophomore class has made a score of 53. Find the point 53 on the vertical scale in the Percentile Graph and move the pencil horizontally to the point at the same height on the percentile curve. This point represents on the horizontal scale a percentile rank of 79. The percentile rank of the individual among the members of his class is, therefore, 79, which means that his score exceeds the scores of 79 per cent of his class. A score of 53 represents a Percentile Rank of 89 among the members of the freshman class.

In so far as mental ability, as measured by this examination, is an indication of the scholarship to be expected from a student, the percentile rank of a student in class may be taken as showing how he should stand in this regard to the class as a whole.

The meaning of "percentile rank in class" must be distinguished from that of "Percentile Rank," a measure of brightness, referring to the rank of an individual among a large unselected group of his own age.

Reliability and Validity

Reliability. By "reliability" is meant the degree to which the scores of the test are consistent in measuring whatever the test measures. Reliability is determined by means of correlation between different forms of the same test. The coefficients of correlation were found between Forms A and B of both examinations as follows:

Higher Examination, Grades 7 to 12:

Group I, Form A first, 128 cases, $r = .917 \pm .009$
Group II, Form B first, 125 cases, $r = .925 \pm .009$
} avg. .921

Intermediate Examination, Grades 4 to 9:

Group I, Form A first, 215 cases, $r = .953 \pm .006$
Group II, Form B first, 212 cases, $r = .943 \pm .007$
} avg. .948

[1] The value so found may not be exactly the same as the median found in the usual way by counting to the middle paper in order of score, but if not, the median score found by means of the curve is considered to represent the distribution better and to be in that sense more accurate.

The values of the probable error of a score determined from these groups were respectively 2.56 and 2.68 points for the Higher Examination and 2.85 and 2.78 for the Intermediate Examination. The probable error of a score in either examination, therefore, is slightly over $2\frac{1}{2}$ points. This means that the score in either examination will be correct within about $2\frac{1}{2}$ points in half the cases. As has been shown, this means also that the probable error of an IQ is about $2\frac{1}{2}$ points.

Validity. There is no direct method, of course, of finding the true validity of the tests — the degree to which they measure the hypothetical quality we call mental ability. The method of standardization is perhaps the best assurance as to the validity of the tests. Various other indications are available, however. The coefficient of correlation between the Higher Examination and the Advanced Examination taken two years earlier was .889 for 180 cases in Grades 7 to 12. The average of four coefficients of correlation between the Higher and Intermediate Examinations, averaging about 100 cases each in groups covering Grades 7 to 9, was .842. The correlation between scores in the Higher Examination and "scholarship" is reported by Clarence W. Proctor, Principal of High School, Bangor, Maine, as follows:

Grade 11, number of cases 240, $r = .55$
Grade 12, number of cases 204, $r = .57$

The correlation between scores in the Higher Examination and scholarship as reported by the teachers of 157 high school freshmen in Oakland, California, was .59.

The correspondence between scores in the Higher Examination and letter ratings used in connection with Alpha is shown in Table 10.

TABLE 10

ALPHA RATINGS	ALPHA SCORES	SCORES IN HIGHER EXAMINATION
A	135–212	58–75
B	105–134	49–57
C+ . . .	75–104	39–48
C	45–74	28–38
C− . . .	25–44	20–27
D	15–24	15–19
E	0–14	0–14

A high score. One student has been reported to have made a perfect score of 75 points in the Higher Examination in 20 minutes. This student is characterized by the professor of educational psychology of the college as follows:

"The person is a young man just past 21 years of age. He had very poor high school training due to the fact that the schools in his section of North Carolina are not what they should be. He is finishing college in $3\frac{1}{2}$ years with about 8 quarter-hours to spare. I have looked up his college record and find that he has grades of A's or B's. There are no C's, D's, or F's. He won the scholarship medal at college before he came to this institution. (He entered here as a senior.) He is a good mixer, and I do not believe that he puts in very many hours on his studies.

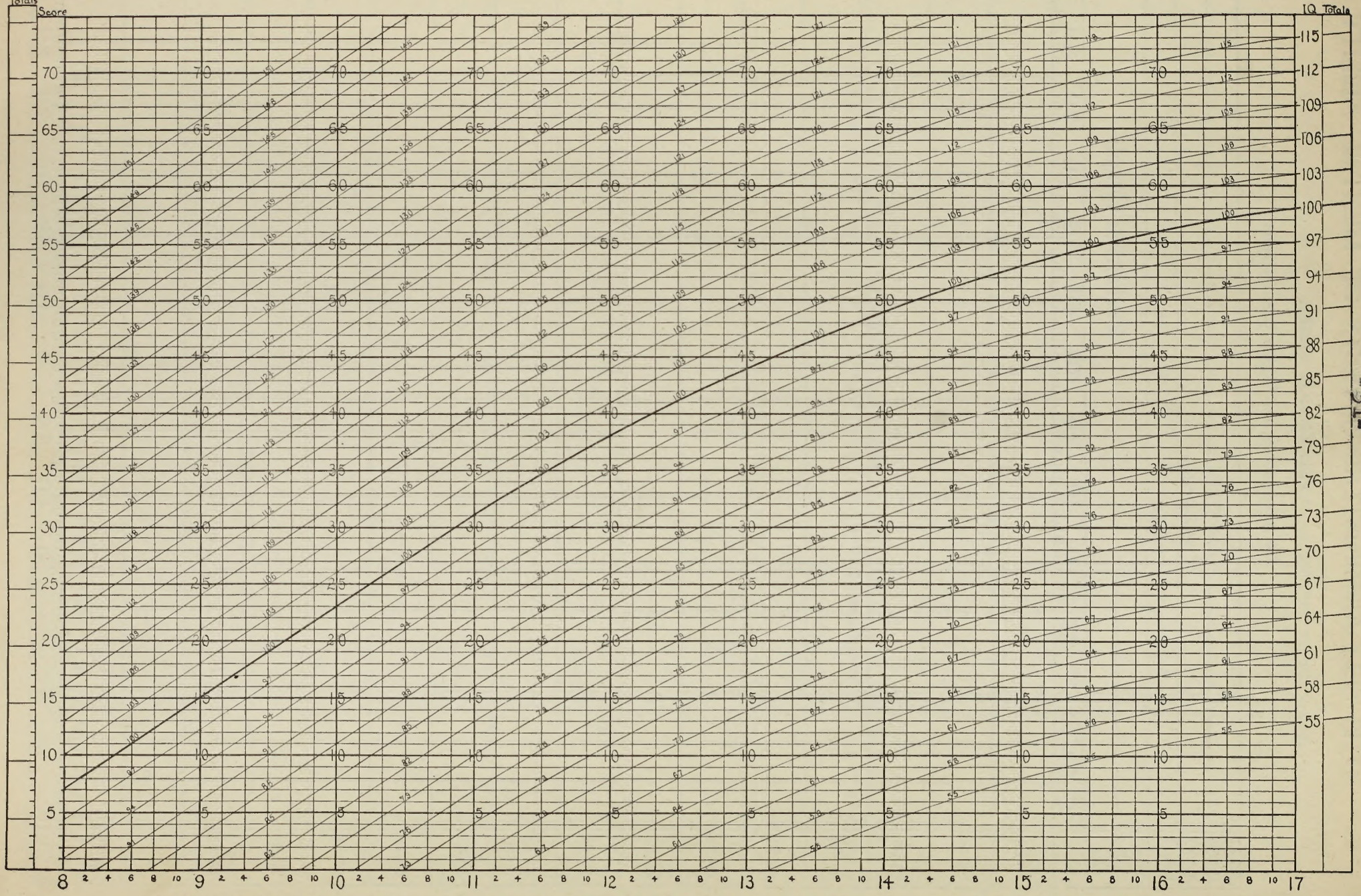
"The father is a rather successful farmer. In fact, from what I can gather, he is the best farmer in his neighborhood. An older brother is a professor in a college. I have had this young man in several classes. It is my firm conviction that he could finish the average college course in two years."

Test Service Bulletins. The reader is invited to send to the World Book Company for free copies of the Test Service Bulletins for further information about testing.

OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

INTERPRETATION CHART. For Intermediate Examination

Grades plotted.....Number.....Form used.....Time limit.....min. Date.....19...



[1]

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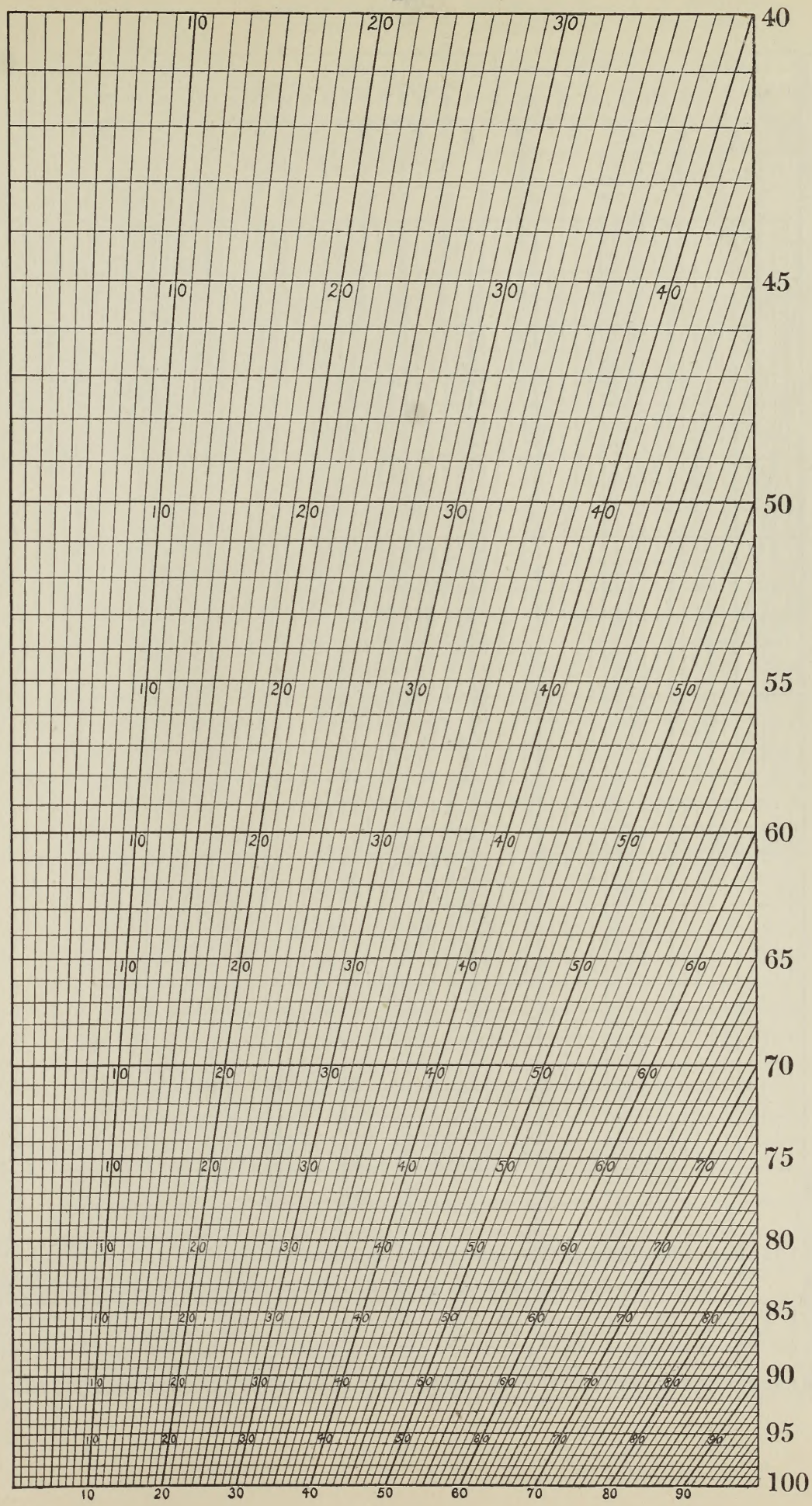
OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

PERCENTILE GRAPH

For Intermediate and Higher Examinations

Grade or Class							Examination	Percentile Graph
Number							School or College	
Date of Exam.							Examiner	
Form Used								
Time Limit								
Score	Tallying	Sub-totals	Per cents	Tallying	Sub-totals	Per cents	0 10 20 30 40 50 60 70 80 90 100	
75								75
70-74								70
65-69								65
60-64								60
55-59								55
50-54								50
45-49								45
40-44								40
35-39								35
30-34								30
25-29								25
20-24								20
15-19								15
10-14								10
5- 9								5
0- 4								0
Class Medians							0 10 20 30 40 50 60 70 80 90 100	

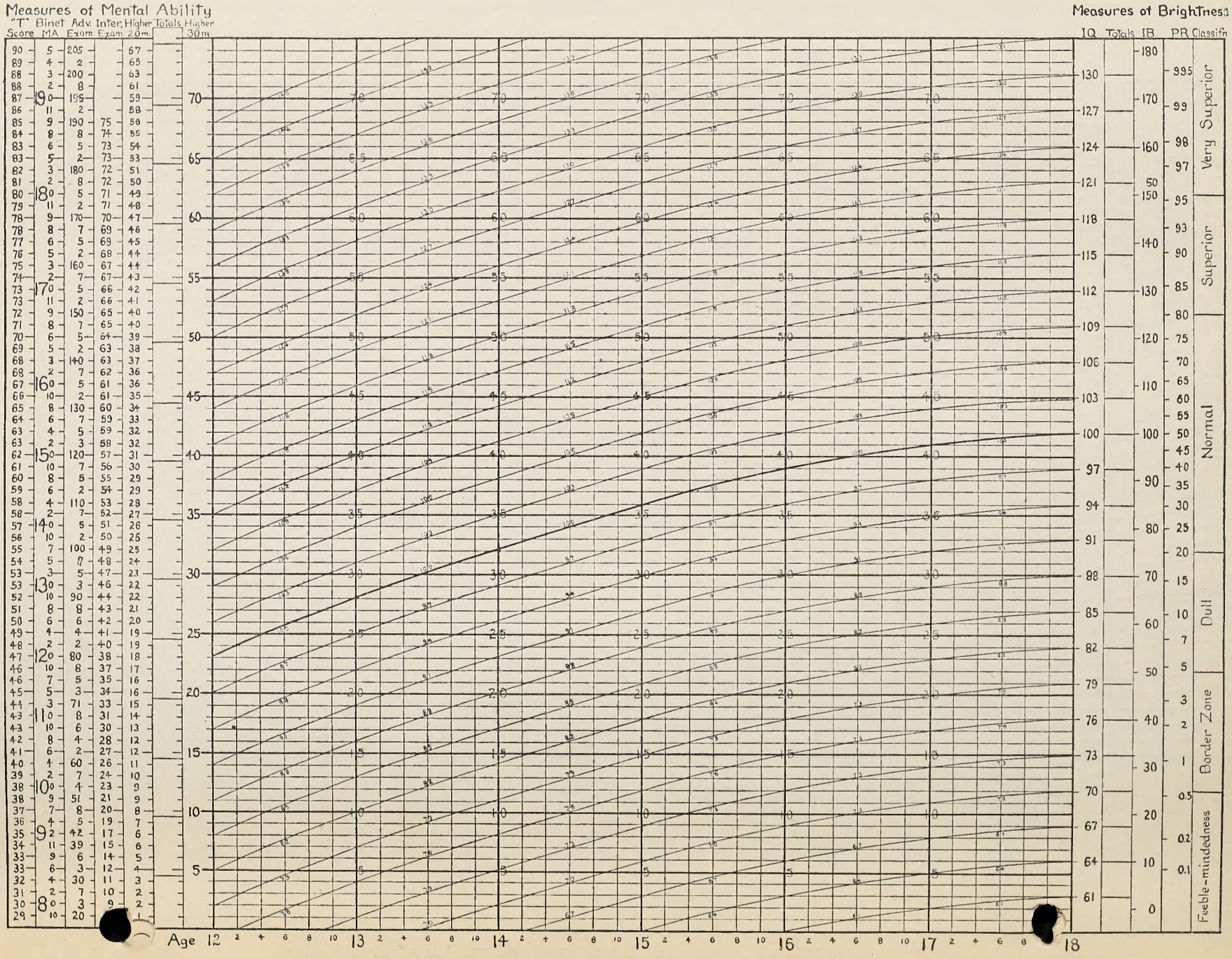
SCALE CHART



OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

INTERPRETATION CHART. For Higher Examination

Classes plotted.....Number.....Form used.....Time limit.....min. Date.....19....



IQ SCALES

For Finding an IQ from a Pupil's Age and His Score in the Otis Self-Administering Tests of Mental Ability: Higher Examination and Intermediate Examination

Preparing for Use

First separate strips *A*, *B*, *C*, and *D* by cutting on the lines between them. If desired, these strips may be mounted on cardboard. Next, with a razor blade or sharp knife cut out the four rectangles in strips *A* and *B*, making "windows" through which the IQ is to be read.

To Find an IQ by the Intermediate Examination

Find the pupil's score in the right-hand column of strip *B* (the column headed "Score"). Put your pencil on the pupil's score in this column.

Next lay strip *A* upon strip *B* in such a position that the age of the pupil as found on strip *A* is directly opposite his score on strip *B*. The pupil's IQ is then read in the window labeled "IQ" at either the top or the bottom of the strip.

For example, suppose the pupil has made a score of 50 and his age is 12 years 10 months. In that case adjust strip *A* upon strip *B* so that the line reading 12:9–12:11 is opposite the score of 50. (12:10 is in the interval 12:9–12:11.) It will be seen that the IQ appearing at the top of strip *A* is 107.

To Find an IQ by the Higher Examination

An IQ by the Higher Examination is found in the same way, using strips *C* and *D*. When first using these scales it would be well to check a few IQ's by means of the method given on page 6 of the Manual of Directions, in order to be sure that the scales are being properly used.

Forms A and C of the Higher Examination are of equal difficulty. Forms B and D are each 4 points more difficult than Forms A and C. This scale is drawn up for use with scores in Forms A and C direct. **If you have used Form B or Form D of the Higher Examination, add 4 points to each pupil's score before finding the IQ.**

A Refinement in Finding IQ's

It will be noted that the method of figuring IQ's as provided in the Manual is such that the highest IQ obtainable by a pupil of 17 years 6 months or over in the Higher Examination is 133, whereas much higher IQ's than this can be obtained by pupils of lower ages. This is because the distribution of IQ's of adults by the Higher Examination is skewed. When the skewness of this distribution of IQ's has been corrected by statistical means, it is found that the IQ of a pupil of 17 years 6 months or over who has made a score of 75 should be 144, and there should be a corresponding increase in the IQ's of such pupils making scores above 67. It is for this reason that the scores from 67 to 75 in strip *D* have been spaced out. The use of this refinement in figuring IQ's from high scores in the Higher Examination is optional, but IQ's so derived are more comparable to IQ's obtained by the younger pupils.

A — INTERMEDIATE EXAMINATION

Age (in years and months)

(16:8 – 17:5 means all ages from 16 yr., 8 mo. to 17 yr., 5 mo.)

IQ → *Cut out*

17: 6 or over
16: 8 – 17: 5
16: 3 – 16: 7
15:10 – 16: 2
15: 6 – 15: 9
15: 3 – 15: 5
14:11 – 15: 2
14: 8 – 14:10
14: 5 – 14: 7
14: 2 – 14: 4
13:11 – 14: 1
13: 9 – 13:10
13: 7 – 13: 8
13: 4 – 13: 6
13: 2 – 13: 3
13: 0 – 13: 1
12: 9 – 12:11
12: 7 – 12: 8
12: 5 – 12: 6
12: 3 – 12: 4
12: 1 – 12: 2
12: 0
11:10 – 11:11
11: 8 – 11: 9
11: 6 – 11: 7
11: 4 – 11: 5
11: 3
11: 1 – 11: 2
11: 0
10:10 – 10:11
10: 9
10: 7 – 10: 8
10: 6
10: 4 – 10: 5
10: 3
10: 1 – 10: 2
10: 0
9:10 – 9:11
9: 9
9: 7 – 9: 8
9: 6
9: 4 – 9: 5
9: 3
9: 1 – 9: 2
9: 0
8:10 – 8:11
8: 9
8: 7 – 8: 8
8: 6
8: 4 – 8: 5
8: 3
8: 1 – 8: 2
8: 0

Cut out ← IQ

B — INTERMEDIATE EXAMINATION

IQ	IQ	Score
	115	
	114	75
	113	74
	112	73
	111	72
	110	71
	109	70
	108	69
	107	68
	106	67
	105	66
160	104	65
159	103	64
158	102	63
157	101	62
156	100	61
155	99	60
154	98	59
153	97	58
152	96	57
151	95	56
150	94	55
149	93	54
148	92	53
147	91	52
146	90	51
145	89	50
144	88	49
143	87	48
142	86	47
141	85	46
140	84	45
139	83	44
138	82	43
137	81	42
136	80	41
135	79	40
134	78	39
133	77	38
132	76	37
131	75	36
130	74	35
129	73	34
128	72	33
127	71	32
126	70	31
125	69	30
124	68	29
123	67	28
122	66	27
121	65	26
120	64	25
119	63	24
118	62	23
117	61	22
116	60	21
	59	20
	58	19
	57	18
	56	17
	55	16
	54	15
	53	14
	52	13
	51	12
	50	11
		10
		9
		8
		7
		6
		5
		4
		3
		2
		1
		0

C — HIGHER EXAMINATION

Age (in years and months)

(16:9 – 17:5 means all ages from 16 yr., 9 mo. to 17 yr., 5 mo.)

IQ → *Cut out*

17: 6 or over
16: 9 – 17: 5
16: 3 – 16: 8
15:10 – 16: 2
15: 6 – 15: 9
15: 2 – 15: 5
14:11 – 15: 1
14: 8 – 14:10
14: 5 – 14: 7
14: 2 – 14: 4
13:11 – 14: 1
13: 8 – 13:10
13: 5 – 13: 7
13: 2 – 13: 4
12:11 – 13: 1
12: 8 – 12:10
12: 6 – 12: 7
12: 3 – 12: 5
12: 1 – 12: 2
12: 0

Cut out ← IQ

D — HIGHER EXAMINATION

IQ	IQ	Score
		75
		74
		73
160		
159	130	72
158	129	
157	128	71
156	127	
155	126	70
154	125	
153	124	69
152	123	
151	122	68
150	121	
149	120	67
148	119	66
147	118	65
146	117	64
145	116	63
144	115	62
143	114	61
142	113	60
141	112	59
140	111	58
139	110	57
138	109	56
137	108	55
136	107	54
135	106	53
134	105	52
133	104	51
132	103	50
131	102	49
	101	48
	100	47
	99	46
	98	45
	97	44
	96	43
	95	42
	94	41
	93	40
	92	39
	91	38
	90	37
	89	36
	88	35
	87	34
	86	33
	85	32
	84	31
	83	30
	82	29
	81	28
	80	27
	79	26
	78	25
	77	24
	76	23
	75	22
	74	21
	73	20
	72	19
	71	18
	70	17
	69	16
	68	15
		14
		13
		12
		11
		10

CLERICAL APTITUDE

WORKSAMPLE 1, FORM A

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		SAME	DIFFERENT
96	96		
64	68		
55	55		
43	63		
80	80		
392	397		
653	653		
659	956		
8672	8762		
1983	1983		
34289	34298		
93416	93416		
740816	740816		
459632	449632		
493856	495836		
9999603	9996903		
3701043	3701043		
2573296	2573296		
5638398	5638396		
65685453	66585453		
58938975	59838975		
39375918	37395918		
602469586	602469586		
627793184	627793184		
684352013	864352013		
2193511968	2193511968		
3696148532	3696418532		
8017117657	8017177657		
63578153261	63578153261		
26575394368	26557394368		

CLERICAL APTITUDE

WORKSAMPLE 1, FORM B

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		SAME	DIFFERENT
69	69		
85	88		
98	78		
33	33		
90	90		
541	544		
956	659		
905	905		
8762	8762		
1382	1832		
18580	18380		
83094	83094		
740816	740846		
439506	436506		
493856	493856		
8888701	8887801		
5105923	5105923		
2501036	2510136		
6274436	6274438		
55618543	56518543		
38910866	39810866		
19178591	17198591		
710243586	710243586		
435867102	435687102		
776284931	776284931		
1203484657	1203484657		
6631672468	6631762468		
8034344657	8034344657		
38797625147	38797652147		
26557239164	26575239164		

CLERICAL APTITUDE

WORKSAMPLE 1, FORM C

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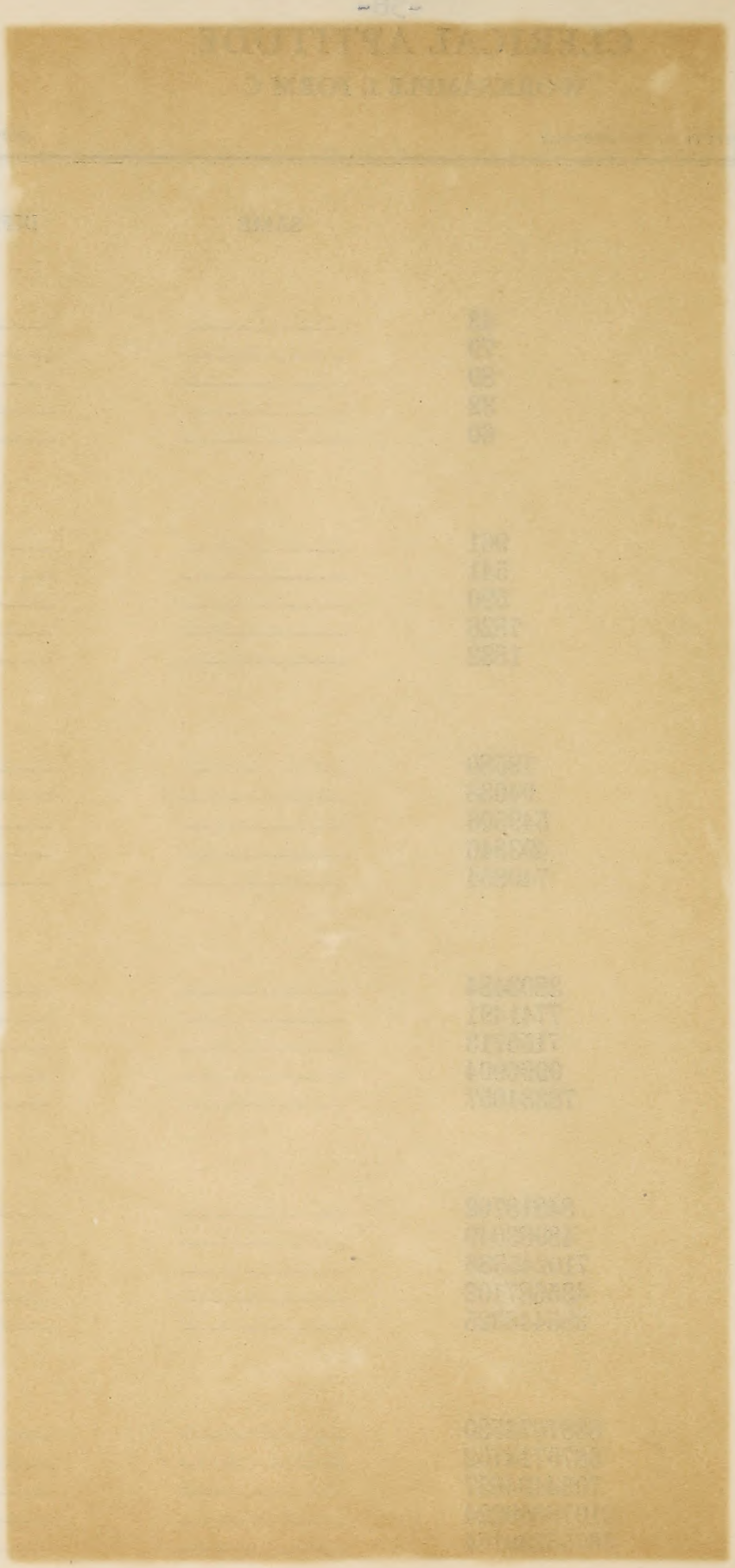
		SAME	DIFFERENT
43	43		
69	79		
87	89		
32	32		
50	60		
691	961		
544	541		
590	590		
7826	7826		
1382	1832		
18580	19580		
94038	94038		
546506	549506		
493816	493846		
740854	740854		
3803484	3803484		
7714191	7741491		
7156715	7156713		
9999604	9996904		
78334657	78334657		
81848762	84818762		
48983049	48983049		
710243586	710245386		
435687102	435687102		
835448325	385448325		
8887674580	8887674580		
3879714752	3879714752		
7034344657	7034434657		
12078659224	21078659224		
36755293164	36755239164		



"EYERITIS"

By RICHARD HILL WILKINSON

For many years I have been spending winter seasons at Sam Barry's dude ranch in southern Arizona. During this time two things have had a noticeable influence on me.

The first is my friendship with Dr. Mort Carpenter. Doc Mort, as he is called by those who know him best, was a guest at the Lazy B the winter of my first visit. And since then he has been as regular as I in patronizing Sam's establishment.

The second thing that has proved an influence is my curiosity regarding Sam himself. Sam is not a dyed-in-the-wool westerner. There is a refinement about him and an inflection to his speech that hints of Cambridge, Mass, and a certain institution for learning that is located there.

Many times I have wondered about Sam and been prompted to question him, being restrained at the last moment by a certain subtle reserve with which Sam has imbued himself, and common courtesy.

Last winter my curiosity was satisfied. But it was Doc Mort who gave me the story. I knew Doc and Sam were close friends, and one day I screwed my courage to the necessary pitch and popped the question.

Doc looked at me with rather a queer expression, and for a long moment made no reply. "Understand," I went on apologetically, "I am a dealer in words and I merely ask in the hopes that I might be able to get him into a story."

Doc Mort chuckled at this. "You might, at that," he said. "And I'll tell you the yarn, though there are certain confidences that must be observed.

Doc Mort lit his pipe and stared into the fire. "There is in all of us," he began, "a certain amount of inertia that frequently proves the greatest obstacle standing in the way of accomplishment. Most of us live for the greater part in our dreams. We dream of the things we might do, of the places we might be, 'if only——.' And we are prone to let it go at that. More times than not it requires some influence outside our daily routine to provide the necessary stimulant to suppress the thing.

"It was so with Sam. Ever since he was a kid Sam dreamed of being a cowboy, living on a ranch. He read books on the subject, talked about it incessantly, played cowboy games whenever he could get any one to play with him.

"Of course, his folks set the desire down as a mere childish whimsicality. It did not alarm them, for the malady was common. What boy doesn't have such dreams?

"But with Sam it was different. The older he got the more intense became his longing. Once or twice he suggested the possibility to his folks, only to be laughed at. Ridiculous, they said. Besides, they had different ideas for their only child.

"But of course this didn't stop Sam from thinking and dreaming and making half-tentative plans. He considered running away, but dismissed the idea at once. That wouldn't be fair to his folks. He contemplated bumming his way west after graduation from Harvard, and taking his chances on getting a job. But conditions in the Southwest, he'd heard, were poor, and what if no jobs were available?

"In fact, Sam considered several schemes and discarded them all. There was that inevitable inertia to overcome which had spelled defeat for so many others. If only he could somehow get started, he felt the rest would take care of itself.

"Well, during Sam's last year at Harvard he had trouble with his eyes. Studied too hard. And eventually he was forced to consult an oculist. The oculist gave him a thorough examination, but found nothing radically wrong. Instead of prescribing expensive glasses, he suggested that Sam merely rest his eyes for a while and permit himself to be kept under observation.

"Sam gratefully assented to the plan. He disliked the idea of glasses and was willing to do most anything to prevent wearing them. So he continued to call at the oculist's office once or twice a week for treatment and observation. It developed that the two became quite friendly, though, of course, Sam was much younger than the medical man. And in the course of events the youth confessed his cherished dream, expecting to be laughed at, pleased when he discovered a sympathetic listener.

"A month passed and the oculist finished his treatments. The results, however, weren't so satisfactory as they might be. Sam had, it developed, contracted a case of Eyeritis. Not a serious malady, but one demanding an immediate change of climate.

"Strange how fate worked in Sam's favor. The oculist called the boy's father and advised the older Mr. Barry that Sam would have to migrate to a warm and dry climate immediately, unless he wanted his eyesight seriously impaired.

"Naturally Sam's parents were much concerned. They arranged immediately for him to leave for Phoenix. They weren't wealthy folks, but they managed to send Sam enough money to get along on until he could find a job. Which happened about two weeks after his arrival in the Southwest.

"Yes, sir. Sam got a job keeping books and acting as general roustabout on a dude ranch. The Lazy B. And now he owns the outfit, lock, stock and barrel. Goodness knows how he did it, but he managed, what with his own burning desire to be a cowboy and some slight financial help from a certain interested party back home. You see, after that first inertia was overcome, after Sam got on the ground, nothing could stop him."

Doc Mort finished his story, and I said: "I see. I don't suppose you'd want to tell me who 'the interested party' was? I mean, the one who advanced Sam the capital."

Doc's face was sober. After a moment he said: "Well, the interested party, like Sam, had always had a similar longing. He had always wanted to go west and become a rancher, too, but he lacked the initiative to overcome that ever-present inertia. Sam's predicament gave him an opportunity to sink some money into something he'd always thought worth while."

"Well, well," I grinned. I turned to him. "By the way, Doc, you're an eye doctor, just what is 'Eyeritis'?"

Doc Mort gave a little start. He looked at me and there was a twinkle in his eyes. "Frankly," he said, "I don't know. I never looked it up, for fear I'd find there wasn't such a word."

--- Boston Herald, April 13, 1935.

NAME_____ SCORE_____

AGE_____ *Form for Men*

A–S REACTION STUDY

DIRECTIONS: Most of these situations will represent to you your own actual experiences. Reply to the questions spontaneously and truthfully by checking the answer which most nearly represents your usual reaction. If a situation has not been experienced, endeavor to feel yourself into it and respond on the basis of what you believe your reaction would be. If the situation seems totally unreal or impossible to respond to, you may omit it.

1. In witnessing a game of football or baseball in a crowd, have you intentionally made remarks (witty, encouraging, disparaging, or otherwise) which were clearly audible to those around you?

   frequently_____

   occasionally_____

   never_____

2. a) At a reception or tea do you seek to meet the important person present?

   usually_____

   occasionally_____

   never_____

   b) Do you feel reluctant to meet him?

   yes, usually_____

   sometimes_____

   no_____

3. At church, a lecture, or an entertainment, if you arrive after the program has commenced and find that there are people standing, but also that there are front seats available which might be secured without "piggishness" or discourtesy, but with considerable conspicuousness, do you take the seats?

   habitually_____

   occasionally_____

   never_____

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4. A salesman takes manifest trouble to show you a quantity of merchandise; you are not entirely suited; do you find it difficult to say "No"?

yes, as a rule_____

sometimes_____

no_____

5. a) Have you solicited funds for a cause in which you are interested?

yes_____

no_____

b) Do you feel reluctant to do such soliciting?

yes_____

no_____

6. a) A professor or lecturer asks any one in the audience, say of 20 or more people, to volunteer an idea to start discussion. You have what appears to be a good idea, do you speak out?

habitually_____

occasionally_____

rarely_____

never_____

b) Do you feel self-conscious when you speak under such circumstances?

very_____

moderately_____

not at all_____

7. You have heard indirectly that an acquaintance has been spreading rumors about you which, though not likely to be serious in consequence, are nevertheless unjustified and distinctly uncomplimentary. The acquaintance is an equal of yours in every way. Do you usually

"have it out" with the person_____

let it pass without any feeling_____

take revenge indirectly_____

feel disturbed but let it pass_____

8. Some one tries to push ahead of you in line. You have been waiting for some time, and can't wait much longer. Suppose the intruder is the same sex as yourself, do you usually

remonstrate with the intruder_____

"look daggers" at the intruder or make clearly audible comments to your neighbor_____

decide not to wait, and go away_____

do nothing_____

9. Do you feel self-conscious in the presence of superiors in the academic or business world?

markedly_____

somewhat_____

not at all_____

10. Some possession of yours is being worked upon at a repair shop. You call for it at the time appointed, but the repair man informs you that he has "only just begun work on it." Is your customary reaction

to upbraid him_____

to express dissatisfaction mildly_____

to smother your feelings entirely_____

11. After a very tiring day you decide to keep your seat in a crowded street-car even though ladies have to stand. You overhear one of the ladies refer to the situation in some remark to her companion. Do you

rise and offer your seat_____

remain in your seat feeling ill at ease_____

remain in your seat without embarrassment_____

12. You are at a mixed party where about half the people are friends of yours. The affair becomes very dull, and something should be done to enliven it. You have an idea. Do you usually

take the initiative in carrying it out_____

pass it on to another to put into execution_____

say nothing about it_____

13. When you are served a tough steak, a piece of unripe melon, or any other inferior dish at a high class restaurant, do you complain about it to the waiter?

occasionally_____

seldom_____

never_____

14. Have you crossed the street to avoid meeting some person?

frequently_____

occasionally_____

never_____.

15. Have you haggled over prices with tradesmen or junk men?

frequently_____

occasionally_____

never_____

16. In tennis or any similar competition when you are pitted against some one considerably superior to you in this particular ability, are you as a rule

determined to win in spite of his advantage_____

not especially hopeful, but unwilling to concede defeat at the start_____

inclined to admit to yourself defeat at the outset, hoping only to make a presentable score_____

17. You desire to board a boat or train to see a friend off, or to enter an exhibition or park; the guard forbids you on what seem to be entirely unnecessary technicalities, do you argue with him and bluff your way past?

habitually_____

occasionally_____

never_____

18. When you were 10 or 12 years of age were you the "goat" for your playmates? (e.g., in playing war would they force you to fight on the unpopular side?)

usually, yes_____

occasionally_____

never_____

19. Suppose you have recently become a salesman and are trying to sell life insurance to a middle-aged financier of great note. He says, "Young man, I don't know how long you have been in this game, but you will never succeed unless you acquire more experience and confidence in yourself." What will be your reaction?

to persist in the attempt to sell insurance_____

to agree and seek further advice from him_____

to become emotionally disturbed in your reply, — angry, embarrassed, or condescending_____

simply to take leave_____

20. You are with a group of people in the woods, and although not certain of the path, you probably know as much about it as anyone present. Do you take responsibility of guiding the group?

take the full responsibility_____

make suggestions or agree to share the responsibility_____

let another take the lead according to his judgment_____

21. a) If you feel a person is dictatorial and domineering, do you as a rule make it a point to avoid him?

yes_____

no_____

b) If unavoidably thrown with him at a gathering, do you feel annoyed?

yes_____

no_____

c) Do you usually

try to treat him the same way he treats you_____

behave normally, but wish either you or he had not come_____

feel and behave normally_____

22. a) When you see some one in a public place or crowd whom you think you have met or known, do you inquire of him whether you have met before?

sometimes_____

rarely_____

never_____

b) Are you embarrassed if you have greeted a stranger whom you have mistaken for an acquaintance?

very much_____

somewhat_____

not at all_____

23. a) Have you ever been made to feel antagonistic or irritated on account of the "bossy" way a chairman conducts a meeting?

frequently_____

occasionally_____

never_____

b) Do you take the initiative in opposing such a person?

usually_____

sometimes_____

never_____

24. If a student in class discussion makes a statement that you think erroneous, do you question it?

usually_____

occasionally_____

never_____

25. If you hold an opinion the reverse of that which the lecturer has expressed in class, do you usually volunteer your opinion

in class_____

after class_____

not at all_____

26. When an accident occurs where many people are present besides yourself do you usually

take an active part in assisting_____

take the part of a spectator_____

leave the scene at once_____

27. When a book-agent or insurance salesman comes to your home or to your room, do you as a rule find it difficult to refuse to listen to him, or to get rid of him as soon as the purpose of his visit becomes clear?

quite difficult_____

moderately difficult_____

not at all difficult_____

28. When the clerk in a store where you have been waiting for some time for service overlooks you and waits on a customer who has come into the store after you, do you as a rule

call his attention to the fact_____

wait silently, though perhaps with an injured air_____

go out to another store_____

29. Have you ever felt that a professor talks too much in class and should give you more chance to express your views and conclude points?

frequently_____

occasionally_____

never_____

30. a) Have you largely on your own initiative in the past five years organized clubs, teams, or other such groups?

more than three_____

one to three_____

none_____

b) Have you within the past five years been recognized as leader (president, captain, chairman) of groups?

more than six_____

one to six_____

none_____

31. In conversing with a person older than yourself whom you respect, on an issue about which you disagree, do you characteristically

maintain your views in argument_____

conciliate your opponent by seeming to agree with him, and yet try indirectly to carry your point_____

agree with him, at least verbally, and let it go at that_____

32. You are dining with a young lady whom you are trying to impress. The waiter presents a bill which is slightly larger than you expected it to be. Do you verify the bill before paying it?

openly_____

surreptitiously_____

not at all_____

33. A friend with whom you are not particularly intimate has a racquet, skates, skis, or some similar article which you would like very much to borrow for an afternoon. Do you feel a hesitation in asking for it?

usually_____

sometimes_____

rarely_____

T H E A-S R E A C T I O N S T U D Y

REVISION FOR BUSINESS USE

A Scale for Measuring Ascendancy-Submission in Personality

Adapted from the Original Form of
Gordon W. Allport and Floyd H. Allport

by

R. O. Beckman
Psychological Corporation

MANUAL OF DIRECTIONS, SCORING
VALUES, AND NORMS

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The A-S Reaction Study[1]

REVISION FOR BUSINESS USES

Purpose

This behavior study aims to discover the disposition of an individual to dominate his fellows (or to be dominated by them) in various face-to-face relationships of everyday life. It presents a number of situations in each of which the subject is required to select one of a group of standardized responses which most nearly characterizes his usual behavior in that situation. Not all of the responses chosen will reveal an invariable ascendance or submission, for most people show both types of behavior at different times and under different conditions. This study, however, has enough situations to detect which of these two types of reaction, if either, is the more characteristic; and the total score gives an expression of the dominance of the one or the other.

Instructions for Giving

1. There are three forms of the A-S Reaction Study. The first or original forms, one for men and one for women, were primarily devised for use with college students or recent graduates. This manual concerns itself with a revision more suitable for business use, particularly in the selection of employees and the counselling of adults. It is standardized for men only. The three forms are separately standardized, differently scored, and cannot be interchanged.

2. The Reaction Study is self-administering. It may be taken in a group or individually, though it should be borne in mind that the norms have been computed from results obtained in part in the group situation. More precise results can be obtained when the study is given individuals in a group. A comparison of scores is particularly significant when made between those of men engaged in the same type of employment or vocation.

3. There is no time limit. Twenty minutes is usually more than ample; very few subjects require longer. When administered to a group, the directions at the top of the blank forms should be read aloud, calling attention to the last provision, viz., "Should the situation seem totally unreal or impossible to respond to, omit it."

4. Attention should also be called to the fact that sincere and thorough cooperation is required. If the subject, perhaps an applicant for work, tries to falsify his responses, he is apt to defeat his major aim. The person conducting the study should emphasize that the form seeks to determine what the subject actually does in certain situations. It is not a test of knowledge, but a study of reactions. Experience has shown that the Reaction Study generally arouses the interest of subjects.

5. Possible errors due to the subjective nature of the study can be greatly reduced if the subjects are instructed to check the items not on the basis of a general feeling of what they "would do", but after a careful recollection of what they actually have done under similar circumstances in the past. The writing in of marginal explanations of answers or the crossing out of words in the text to change the meaning should be discouraged. Check marks only should be used.

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[1] For a more complete discussion of the construction of the original form of this study, its score values, and theory, see "A Test for Ascendance-Submission", Journal of Abnormal and Social Psychology, 1928, Vol. XXIII, No. 2.

6. No suggestion whatever should be given beforehand as to what the form is supposed to measure. The fact that it measures ascendance-submission should not be mentioned, if at all, until after the subjects have finished. It should not be referred to at any time as a test, but only as a form. When used in determining the executive aptitude of applicants for employment in the personnel office of a large organization it is best not to disclose the purpose of the study, since it may in that way become a matter of common knowledge. Both the purpose of the form and the subject's score may be disclosed by an employment interviewer under certain conditions, however, if he wishes to give vocational counsel to either an applicant or an employee or desires to aid the subject in self-development.

7. When the score and purpose are discussed with a subject, experience indicates that one mistaken notion usually needs to be dispelled, namely, that ascendance is intrinsically more desirable than submission. Each has its value and place, but in a different vocational application. Current opinion, to be sure, seems to place a premium upon the convincing and aggressive person, upon the one who can persuade and control others. But if one surveys one's acquaintances it appears that the submissive person is often not only socially pleasing, but in the long run as successful in his adjustments as the ascendant person. Other traits, such as expansiveness, insight, sociability, courtesy, unselfishness and above all, intelligence in social relationships, may be present in a fundamentally submissive personality, and may combine to produce a high degree of effectiveness in daily living.

Instructions for Scoring

In the various situations each response-choice is considered as having a diagnostic value for ascendance or submission according to the score value given in the following table. A plus score indicates responses which show ascendance, while a minus score denotes submissive reactions. A few responses have no diagnostic value either way. These are assigned a value of zero.

Each item should be separately scored in the margin of the page. Omissions or items in which more than one choice is marked, count zero. The final score is the algebraic sum of the scores for the separate items, and should be entered on page 1 after the letters "Sc." This score may be most conveniently obtained by adding separately the plus scores and the minus scores, and subtracting the smaller sum from the larger, retaining the sign of the larger.

Stencils will facilitate scoring by any junior clerk and can best be prepared with transparent paper. In some cases it may be desirable to dictate the score values, allowing the subjects to score their own papers.

For those in the personnel field interested in the method used in determining the score-values or weights, it may be noted that the internal consistency of the revised business form and the diagnostic validity of the items used has been based on the research method of Dr. Charles K. A. Wang of the University of Chicago, to whom the reviser is greatly indebted. Details of this technique will be found in the Journal of Abnormal and Social Psychology, 1931, Vol. XXVI, No. 2.

SCORE VALUES - REVISED FORM FOR BUSINESS USE

Question	Response-Choices	Score
1	frequently	2
	occasionally	0
	never	-2
2	yes, usually	1
	sometimes	0
	probably not	-1
3	habitually	1
	occasionally	0
	never	-1
4	frequently	-2
	sometimes	-1
	not at all	1
5	yes	-2
	no	1
6 a	habitually	3
	occasionally	0
	rarely	-2
	never	-3
6 b	very	-3
	moderately	-1
	not at all	2
7	let is pass without feeling	0
	"have it out" with the person	2
	feel disturbed but let it pass	-1
	take revenge indirectly	-1
8	remonstrate with the intruder	2
	give the intruder a "dirty look" or make audible comments	-2
	decide not to wait and go away	-4
	do nothing	-3
9	frequently	-3
	at times	-1
	never	2
10	criticize him forcefully	2
	express dissatisfaction mildly	0
	smother your feelings	-2
11	ordinarily	1
	seldom	-1
	never	-1

SCORE VALUES - REVISED FORM FOR BUSINESS USE

Question	Responses-Choices	Score
	frequently	5
	occasionally	0
	never	-5
2	yes, usually	1
	sometimes	0
	probably not	-1
3	habitually	1
	occasionally	0
	never	-1
4	frequently	-5
	sometimes	-1
	not at all	1
5	yes	-5
	no	1
6 a	habitually	1
	occasionally	0
	rarely	-5
	never	-1
6 b	very	-1
	moderately	-1
	not at all	5
7	let is pass without feeling	0
	"have it out" with the person	5
	feel disturbed but let it pass	-1
	take revenge indirectly	-1
8	remonstrate with the intruder	5
	give the intruder a "dirty look" or	
	make audible comments	-5
	decide not to wait and go away	-1
	do nothing	-1
9	frequently	-1
	at times	-1
	never	5
10	criticize him forcefully	5
	express dissatisfaction mildly	0
	smother your feelings	-5
11	ordinarily	1
	seldom	-1
	never	-1

12	frequently	2
	occasionally	0
	never	-1
13	never	0
	occasionally	0
	frequently	2
14	buy a tag	-1
	politely disregard the solicitors	2
	refuse to buy a tag	3
15	let another take the lead	-2
	take the full responsibility yourself	1
	make suggestions or agree to share the responsibility	0
16 a	usually	1
	rarely	-1
	never	-2
16 b	very much	-3
	somewhat	-2
	not at all	2
17	occasionally	1
	usually	2
	never	-2
18	usually	1
	occasionally	-1
	never	-1
19	speak out in the meeting	1
	give your opinion after the meeting	-1
	keep your opinion to yourself	-3
20	leave the scene	-2
	take the part of a spectator	-1
	take an active part in assisting	1
21	permit him to tell his story	-1
	tell him you are busy or suggest some other excuse	-1
	refuse to listen to him further	3
22	call his attention to the fact	1
	wait silently, though perhaps with an injured air	-1
	go out to another store	0
23 a	more than three	3
	one to three	1
	none	-3
23 b	more than six	5
	one to six	1
	none	-3

12 frequently..... 2
occasionally..... 0
never..... -1

13 never..... 0
occasionally..... 0
frequently..... 2

14 buy a bag..... -1
politely disregard the solicitors..... 2
refuse to buy a bag..... 3

15 let another take the lead..... -2
take the full responsibility yourself..... 1
make suggestions or agree to share
the responsibility..... 0

16 a usually..... 1
rarely..... -1
never..... -2

16 b very much..... -3
somewhat..... -2
not at all..... 2

17 occasionally..... 1
usually..... 2
never..... -2

18 usually..... 1
occasionally..... -1
never..... -1

19 speak out in the meeting..... 1
give your opinion after the meeting..... -1
keep your opinion to yourself..... -3

20 leave the scene..... -2
take the part of a spectator..... -1
take an active part in meeting..... 1

21 permit him to tell his story..... -1
tell him you are busy or suggest
some other excuse..... -1
refuse to listen to him further..... 3

22 call his attention to the fact..... 1
wait silently, though perhaps with
an injured air..... -1
go out to another store..... 0

23 a more than three..... 2
one to three..... 1
none..... -3

23 b more than six..... 2
one to six..... 1
none..... -3

24	openly	1
	secretly	0
	not at all	-1

Norms

Final scores should be referred to the following table of norms which is tentatively based on 350 cases for the Revised Business Form. These norms are derived from workers in a number of different business organizations and a class of 50 university students. They will be found to be very similar to the norms established on a much larger number of cases with the original Reaction Study.

Decile	Degree of Ascendance-Submission	Range of Scores
1	A 4	49 (44*) to 21
2	A 3	20 to 15
3	A 2	14 to 9
4	A 1	8 to 5
5	Average	4 to 2
6	Average	1 to -1
7	S 1	-2 to -5
8	S 2	-6 to -9
9	S 3	-10 to -15
10	S 4	-16 to -51 (-35*)

*Figures marked with an asterisk indicate the extreme values thusfar actually attained with the Business Revision of the A-S Reaction Study

Median 1; Mean 1.4

Comparisons of a more specific nature may be made with the following occupational groups, all of them based on the present Form for Business Use:

Group	No. of Cases	Range of Scores +	Range of Scores -	Median	Mean
College Juniors and Seniors	50	29	35	-1.	-1.0
Applicants for Student Manager (Chain) Positions	40	33	21	.5	1.1
Managers of Variety Stores(Chain)	110	44	26	8.	7.7
Production Tracers (Electrical Mfg.)	30	25	16	1.	1.8
Field Salesmen (Wholesale)	40	24	14	6.5	5.7
Junior Executives and Technicians (Public Utility)	55	29	23	1.	3.3
Junior Executives (Public Utility)	20	23	8	4.5	6.0
Non-Executives (Public Utility)	16	14	23	-4.	-8.5
Shop Foremen (Electrical Mfg.)	26	32	23	- .5	0

Occupational Results with Original Form

Since the distribution of scores obtained with the original form of the Reaction Study approximates that of the revised form here discussed, earlier results with commercial and industrial groups will be of interest, and to some extent, comparable. In a study of executives in a large chain organization it was found that 87 executives had a median score of +10 and a mean score of +11.48; 20 general managers in the same organization showed a median of +21 and a mean of +21.5. In connection with the civil service of Cincinnati, it was found that 29 department heads and bureau chiefs had an average score of +17.1; whereas 31 water-meter readers averaged -0.9. In another group of 52 men selected for training in salesmanship, a mean score of +13.9 was found. A group of 83 Y.M.C.A. secretaries was found to show a median score of +12. In a merchandising organization in which the A-S Form was filled out by executives, it was found that of all the executives who left the company's service in the course of a year only one-fourth showed positive scores as compared with three-fourths who had scored negatively, thus suggesting that those with submissive traits could not succeed with the organization in question.

Uses of the Scale

Vocational Guidance

It is strongly urged that the scores obtained be regarded as suggestive rather than conclusive. In the selection of personnel or in giving counsel along vocational lines, A-S Reaction Study should be only one of several criteria among such qualifications as general intelligence, work interest, knowledge and skills, appearance and manner, and experience. Those making use of these scores should bear in mind the numerous factors other than ascendance-submission which are present in most social relationships. Individuals may qualify as leaders, or as executives, through intelligence, experience, social or cultural background, or other characteristics which may be quite independent of ascendance-submission.

The following are to be considered merely as common-sense estimates of the vocations in which ascendance or submission would be useful qualities. Each of these vocations requires special capacities or social traits in addition to ascendance-submission. The A-S Reaction score may of course be suggestive; but no one engaged in employee selection or in counselling adults either in self-development or vocational guidance should use it without due consideration of these other factors.

Men with submissive scores, other traits being favorable, may logically be adapted for the fine arts or architecture, design, farming, bookkeeping, banking, dentistry, writing and editing, music, secretarial work, chemistry or other laboratory research, mechanics, etc. Those who are ascendant would appear to have a special advantage in supervisory or executive work (particularly along commercial rather than industrial lines), salesmanship, law, politics, organizing, and kindred work.

Selection and Placement

The test results shown in the table of norms together with earlier results obtained with the original A-S Form indicate that the present test may serve as a criterion for the selection of candidates for promotion or of applicants for executive and supervisory positions. It would also appear to have value in the selection of men for sales jobs requiring considerable aggressiveness, such as those involving canvassing in the field. The original form has already been used for such purposes for a number of years by several commercial firms.

In using the form in personnel administrative work as a measure of selection in hiring or promotion, it is unwise to use standards or norms determined in some other business organization unless the employment in question is similar. It is more satisfactory first to determine the scores of those at present engaged in the class of work in question. This can be done in a group meeting, through individual consultation, or, in case the group is widely scattered, by mail. It is important to explain to those asked to fill out the forms that the results WILL HAVE NO EFFECT WHATEVER ON THEIR STANDING with the company: that they are being asked to supply data which will be used in setting standards for future applicants for employment. When no pressure is brought to bear, and the filling in of the forms is made an optional matter, a prompt and interested response will be found to be forthcoming.

The resultant scores should then be distributed, the mean and median ascertained, and comparisons made with service ratings and records of production or sales. If it is apparent that either an ascendant or a submissive score, as the case may be, is indicative of superior effectiveness in the job in question, a critical score should be set. Applicants failing to measure up to this standard, unless evidencing other offsetting qualifications of an outstanding nature, may be rejected for employment.

Self-Knowledge

An individual who desires a better understanding of himself and an evaluation of his traits may profit by the use of the A-S Reaction Study, since it affords him an objective basis of comparison with other persons of his own class. This gain in insight will be greater when the score is supplemented by interviews with associates, personnel officers, or supervisors with whom one can discuss personal questions in an objective manner.

One example of such an application may be cited. After isolating in a group of 500 students the twenty-five most extreme cases of ascendance and submission, it was discovered that with intensive personal work for a period of approximately six months, striking changes in these traits could be produced. Success was more marked for submissive than for ascendant subjects, and more rapidly achieved when the environmental factors operative in building up the traits were ascertainable.

Acknowledgements and Communications

The original and revised scales were made possible by the generous cooperation of numerous psychologists, research workers, and industrial firms. The list is unfortunately too long to permit individual mention.

Additional results obtained with the A-S Study for Business Use, in a variety of occupational fields, are greatly to be desired. If users of the form will therefore continue to send in a statement of the distribution of scores and of the nature of the groups tested, the results may be made available to others and the authors and revisers will be grateful. Inquiries, criticisms, correlations, etc., will be equally welcomed. Address communications to R. O. Beckman, Room 529 - 522 Fifth Avenue, New York.

Group..... Form A

Key number ..... Date.....

VOCATIONAL INTEREST BLANK

By EDWARD K. STRONG, JR.
Professor of Psychology, Stanford University
Copyright 1927 by STANFORD UNIVERSITY PRESS, Publishers

It is possible with a fair degree of accuracy to determine by this test whether one would like certain occupations or not. The test is not one of intelligence or school work. It measures the extent to which one's interests agree or disagree with those of successful men in a given profession.

Your responses will, of course, be held strictly confidential.

Name ..... Age..... Sex.....

Occupation (e.g., Carpenter)..... Years of Experience.....

Just what do you do?.....

.....

Name of Firm and Address.....

.....

Address to which correspondence should be sent.....

.....

Last grade reached in school (e.g., Grammar 6th, High School 2d, College 4th).....

Did you select your present occupation or was it more or less thrust upon you? Selected it..... Thrust upon me.....

What occupations, other than your present one, have you at one time or another engaged in?.....

.....

What occupations have you frequently day-dreamed of entering? .....

.....

Remarks .....

.....

.....

.....

Before turning the page record the time (e.g., 10 minutes after 3 o'clock).....

Parts Ia and Ib. ***Occupations.*** Indicate after each occupation listed below whether you would like that kind of work or not. Disregard considerations of salary, social standing, future advancement, etc. Consider only whether you would like to do what is involved in the occupation.

Draw a circle around L if you like that kind of work.

Draw a circle around I if you are indifferent to that kind of work.

Draw a circle around D if you dislike that kind of work.

Work rapidly. Your first impressions are desired here. Answer all the items. Many of the seemingly trivial and irrelevant items are very useful in diagnosing your real attitude.

Actor (not movie)	L	I	D	Lawyer, Criminal	L	I	D
Advertiser	L	I	D	Lawyer, Corporation	L	I	D
Architect	L	I	D	Librarian	L	I	D
Army Officer	L	I	D	Life Insurance Salesman	L	I	D
Artist	L	I	D	Locomotive Engineer	L	I	D
Astronomer	L	I	D	Machinist	L	I	D
Athletic Director	L	I	D	Magazine Writer	L	I	D
Auctioneer	L	I	D	Manufacturer	L	I	D
Author of novel	L	I	D	Marine Engineer	L	I	D
Author of technical book	L	I	D	Mechanical Engineer	L	I	D
Auto Salesman	L	I	D	Mining Superintendent	L	I	D
Auto Racer	L	I	D	Musician	L	I	D
Auto Repairman	L	I	D	Music Teacher	L	I	D
Aviator	L	I	D	Office Clerk	L	I	D
Bank Teller	L	I	D	Office Manager	L	I	D
Bookkeeper	L	I	D	Orchestra Conductor	L	I	D
Building Contractor	L	I	D	Pharmacist	L	I	D
Buyer of merchandise	L	I	D	Photo Engraver	L	I	D
Carpenter	L	I	D	Physician	L	I	D
Cartoonist	L	I	D	Playground Director	L	I	D
Cashier in bank	L	I	D	Poet	L	I	D
Certified Public Accountant	L	I	D	Politician	L	I	D
Chemist	L	I	D	Printer	L	I	D
Civil Engineer	L	I	D	Private Secretary	L	I	D
Civil Service Employee	L	I	D	Railway Conductor	L	I	D
Clergyman	L	I	D	Rancher	L	I	D
College Professor	L	I	D	Real Estate Salesman	L	I	D
Consul	L	I	D	Reporter, general	L	I	D
Dentist	L	I	D	Reporter, sporting page	L	I	D
Draftsman	L	I	D	Retailer	L	I	D
Editor	L	I	D	Sales Manager	L	I	D
Electrical Engineer	L	I	D	School Teacher	L	I	D
Employment Manager	L	I	D	Scientific Research Worker	L	I	D
Explorer	L	I	D	Sculptor	L	I	D
Factory Manager	L	I	D	Secretary, Chamber of Commerce	L	I	D
Factory Worker	L	I	D	Secret Service Man	L	I	D
Farmer	L	I	D	Ship Officer	L	I	D
Floorwalker	L	I	D	Shop Foreman	L	I	D
Florist	L	I	D	Social Worker	L	I	D
Foreign Correspondent	L	I	D	Specialty Salesman	L	I	D
Governor of a State	L	I	D	Statistician	L	I	D
Hotel Keeper or Manager	L	I	D	Stock Broker	L	I	D
Interior Decorator	L	I	D	Surgeon	L	I	D
Interpreter	L	I	D	Toolmaker	L	I	D
Inventor	L	I	D	Traveling Salesman	L	I	D
Jeweler	L	I	D	Typist	L	I	D
Judge	L	I	D	Undertaker	L	I	D
Labor Arbitrator	L	I	D	Watchmaker	L	I	D
Laboratory Technician	L	I	D	Wholesaler	L	I	D
Landscape Gardener	L	I	D	Worker in Y.M.C.A., K. of C., etc.	L	I	D

Part II. ***Amusements.*** Indicate in the same manner as in Part I whether you like the following or not. If in doubt, consider your most frequent attitude. *Work rapidly.* Do not think over various possibilities. Record your first impression.

Golf	L	I	D
Fishing	L	I	D
Hunting	L	I	D
Tennis	L	I	D
Driving an automobile	L	I	D
Taking long walks	L	I	D
Boxing	L	I	D
Checkers	L	I	D
Chess	L	I	D
Poker	L	I	D
Bridge	L	I	D
Solitaire	L	I	D
Billiards	L	I	D
Observing birds (nature study)	L	I	D
Solving mechanical puzzles	L	I	D
Playing a musical instrument	L	I	D
Performing sleight-of-hand tricks	L	I	D
Collecting postage stamps	L	I	D
Drilling in a company	L	I	D
Chopping wood	L	I	D
Amusement parks	L	I	D
Picnics	L	I	D
Excursions	L	I	D
Smokers	L	I	D
"Rough house" initiations	L	I	D
Conventions	L	I	D
Full-dress affairs	L	I	D
Auctions	L	I	D
Fortune tellers	L	I	D
Animal zoos	L	I	D
Art galleries	L	I	D
Museums	L	I	D
Vaudeville	L	I	D
Musical comedy	L	I	D
Symphony concerts	L	I	D
Pet canaries	L	I	D
Pet monkeys	L	I	D
Snakes	L	I	D
Sporting pages	L	I	D
Poetry	L	I	D
Detective stories	L	I	D
"Literary Digest"	L	I	D
"Life"	L	I	D
"New Republic"	L	I	D
"System"	L	I	D
"National Geographic Magazine"	L	I	D
"American Magazine"	L	I	D
"Popular Mechanics"	L	I	D
"Atlantic Monthly"	L	I	D
"Arts and Crafts"	L	I	D
Cowboy movies	L	I	D
Educational movies	L	I	D
Travel movies	L	I	D
Social problem movies	L	I	D

Part III. ***School Subjects.*** Indicate as in Part II your interest when in school.

Algebra	L	I	D
Agriculture	L	I	D
Arithmetic	L	I	D
Art	L	I	D
Bible Study	L	I	D
Bookkeeping	L	I	D
Botany	L	I	D
Calculus	L	I	D
Chemistry	L	I	D
Civics	L	I	D
Dramatics	L	I	D
Economics	L	I	D
English Composition	L	I	D
Geography	L	I	D
Geology	L	I	D
Geometry	L	I	D
History	L	I	D
Languages, ancient	L	I	D
Languages, modern	L	I	D
Literature	L	I	D
Mathematics	L	I	D
Manual Training	L	I	D
Mechanical Drawing	L	I	D
Military Drill	L	I	D
Music	L	I	D
Nature Study	L	I	D
Penmanship	L	I	D
Philosophy	L	I	D
Physical Training	L	I	D
Physics	L	I	D
Psychology	L	I	D
Physiology	L	I	D
Public Speaking	L	I	D
Shop work	L	I	D
Shorthand	L	I	D
Sociology	L	I	D
Spelling	L	I	D
Typewriting	L	I	D
Zoölogy	L	I	D

Part IV. *Activities.* Indicate your interests as in Part II.

Work rapidly.

Repairing a clock	L	I	D
Making a radio set	L	I	D
Adjusting a carburetor	L	I	D
Repairing electrical wiring	L	I	D
Cabinetmaking	L	I	D
Operating machinery	L	I	D
Handling horses	L	I	D
Giving "first-aid" assistance	L	I	D
Raising flowers and vegetables	L	I	D
Decorating a room with flowers	L	I	D
Arguments	L	I	D
Interviewing men for a job	L	I	D
Interviewing prospects in selling	L	I	D
Interviewing clients	L	I	D
Making a speech	L	I	D
Organizing a play	L	I	D
Opening a conversation with a stranger	L	I	D
Teaching children	L	I	D
Teaching adults	L	I	D
Calling friends by nicknames	L	I	D
Being called by a nickname	L	I	D
Meeting and directing people	L	I	D
Taking responsibility	L	I	D
Meeting new situations	L	I	D
Adjusting difficulties of others	L	I	D
Drilling soldiers	L	I	D
Pursuing bandits in sheriff's posse	L	I	D
Doing research work	L	I	D
Acting as yell-leader	L	I	D
Writing personal letters	L	I	D
Writing reports	L	I	D
Entertaining others	L	I	D
Bargaining ("swapping")	L	I	D
Looking at shop windows	L	I	D
Buying merchandise for a store	L	I	D
Displaying merchandise in a store	L	I	D
Expressing judgments publicly regardless of criticism	L	I	D
Being pitted against another as in a political or athletic race	L	I	D
Being left to yourself	L	I	D
Methodical work	L	I	D
Regular hours for work	L	I	D
Continually changing activities	L	I	D
Continuing at same work until finished	L	I	D
Studying latest hobby, e.g., Einstein theory, Freud, etc	L	I	D
Developing business systems	L	I	D
Saving money	L	I	D
Contributing to charities	L	I	D
Raising money for a charity	L	I	D
Living in the city	L	I	D
Climbing along edge of precipice	L	I	D
Looking at a collection of rare laces	L	I	D
Looking at a collection of antique furniture	L	I	D

Part V. ***Peculiarities of People.*** Record your first impression. Do not think of various possibilities or of exceptional cases. "Let yourself go" and record the feeling that comes to mind as you read the item.

Progressive people	L	I	D
Conservative people	L	I	D
Energetic people	L	I	D
Absent-minded people	L	I	D
People who borrow things	L	I	D
Quick-tempered people	L	I	D
Optimists	L	I	D
Pessimists	L	I	D
People who are natural leaders	L	I	D
People who assume leadership	L	I	D
People easily led	L	I	D
People who have made fortunes in business	L	I	D
Emotional people	L	I	D
Thrifty people	L	I	D
Spendthrifts	L	I	D
Talkative people	L	I	D
Religious people	L	I	D
Irreligious people	L	I	D
People who have done you favors	L	I	D
People who get rattled easily	L	I	D
Gruff men	L	I	D
Witty people	L	I	D
Foreigners	L	I	D
Negroes	L	I	D
Cautious people	L	I	D
Sick people	L	I	D
Nervous people	L	I	D
Very old people	L	I	D
Cripples	L	I	D
Side-show freaks	L	I	D
People with gold teeth	L	I	D
People with protruding jaws	L	I	D
People with hooked noses	L	I	D
Blind people	L	I	D
Deaf mutes	L	I	D
Self-conscious people	L	I	D
People who always agree with you	L	I	D
People who talk very loudly	L	I	D
People who talk very slowly	L	I	D
People who talk about themselves	L	I	D
Methodical people	L	I	D
Fashionably dressed people	L	I	D
Carelessly dressed people	L	I	D
People who do not believe in evolution	L	I	D
Socialists	L	I	D
Bolshevists	L	I	D
Independence in politics	L	I	D
Teetotalers	L	I	D
Men who chew tobacco	L	I	D
Women cleverer than you are	L	I	D
Men who use perfume	L	I	D
People who chew gum	L	I	D
Athletic men	L	I	D

Part VI. ***Order of Preference of Activities.*** Indicate which three of the following ten activities you would enjoy most by checking opposite them in column one; also indicate which three you would enjoy least by checking opposite them in column two. Be sure to mark 3 in each column.

First 3 choices	Last 3 choices	
( )	( )	Develop the theory of operation of a new machine, e.g., auto
( )	( )	Operate (manipulate) the new machine
( )	( )	Discover an improvement in the design of the machine
( )	( )	Determine the cost of operation of the machine
( )	( )	Supervise the manufacture of the machine
( )	( )	Create a new artistic effect, i.e., improve the beauty of the auto
( )	( )	Sell the machine
( )	( )	Prepare the advertising for the machine
( )	( )	Teach others the use of the machine
( )	( )	Interest the public in the machine through public addresses

Indicate in the same way what you consider are the three most important factors affecting your work; also the three least important factors. Be sure to mark 3 in each column.

Most important 3 factors	Least important 3 factors	
( )	( )	Salary received for work
( )	( )	Steadiness and permanence of work
( )	( )	Opportunity for promotion
( )	( )	Courteous treatment from superiors
( )	( )	Opportunity to make use of all of one's knowledge and experience
( )	( )	Opportunity to ask questions and to consult about difficulties
( )	( )	Opportunity to understand just how one's superior expects work to be done
( )	( )	Certainty one's work will be judged by fair standards
( )	( )	Freedom in working out one's own methods of doing the work
( )	( )	Co-workers—congenial, competent, and adequate in number

Indicate in the same way the three men you would most like to have been; also the three you would least like to have been.

First 3 choices	Last 3 choices	
( )	( )	Luther Burbank, "plant wizard"
( )	( )	Enrico Caruso, singer
( )	( )	Thomas A. Edison, inventor
( )	( )	Henry Ford, manufacturer
( )	( )	Charles Dana Gibson, artist
( )	( )	J. P. Morgan, financier
( )	( )	J. J. Pershing, soldier
( )	( )	William H. Taft, jurist
( )	( )	Booth Tarkington, author
( )	( )	John Wanamaker, merchant

Indicate in the same way the three positions you would most prefer to hold in club or society; also the three you least prefer to hold.

First 3 choices	Last 3 choices	
( )	( )	President of a Society
( )	( )	Secretary of a Society
( )	( )	Treasurer of a Society
( )	( )	Member of a Society
( )	( )	Chairman, Arrangement Committee
( )	( )	Chairman, Educational Committee
( )	( )	Chairman, Entertainment Committee
( )	( )	Chairman, Membership Committee
( )	( )	Chairman, Program Committee
( )	( )	Chairman, Publicity Committee

Part VII. ***Comparison of Interest between Two Items.*** Indicate your choice of the following pairs by checking in the first space if you prefer the item to the left, in the second space if you like both equally well, and in the third space if you prefer the item to the right. Assume other things are equal except the two items to be compared.

Work rapidly.

Street-car motorman	( )	( )	( )	Street-car conductor
Policeman	( )	( )	( )	Fireman (fights fire)
Chauffeur	( )	( )	( )	Chef
Head waiter	( )	( )	( )	Lighthouse tender
House to house canvassing	( )	( )	( )	Retail selling
House to house canvassing	( )	( )	( )	Gardening
Repair auto	( )	( )	( )	Drive auto
Develop plans	( )	( )	( )	Execute plans
Do a job yourself	( )	( )	( )	Delegate job to another
Persuade others	( )	( )	( )	Order others
Deal with things	( )	( )	( )	Deal with people
Plan for immediate future	( )	( )	( )	Plan for five years ahead
Activity which produces tangible returns	( )	( )	( )	Activity which is enjoyed for its own sake
Taking a chance	( )	( )	( )	Playing safe
Definite salary	( )	( )	( )	Commission on what is done
Work for yourself	( )	( )	( )	Carry out general program of superior who is respected
Work which interests you with modest income	( )	( )	( )	Work which does not interest you with large income
Work in a large corporation with little chance of becoming president until age of 55	( )	( )	( )	Work for self in small business
Selling article, quoted 10% below competitor	( )	( )	( )	Selling article, quoted 10% above competitor
Small pay, large opportunities to learn during next 5 years	( )	( )	( )	Good pay, little opportunity to learn during next 5 years
Work involving few details	( )	( )	( )	Work involving many details
Outside work	( )	( )	( )	Inside work
Change from place to place	( )	( )	( )	Working in one location
Great variety of work	( )	( )	( )	Similarity in work
Physical activity	( )	( )	( )	Mental activity
Emphasis upon quality of work	( )	( )	( )	Emphasis upon quantity of work
Technical responsibility (head of a department of 25 people engaged in technical, research work)	( )	( )	( )	Supervisory responsibility (head of a department of 300 people engaged in typical business operation)
Present a report in writing	( )	( )	( )	Present a report verbally
Listening to a story	( )	( )	( )	Telling a story
Playing baseball	( )	( )	( )	Watching baseball
Amusement where there is a crowd	( )	( )	( )	Amusement alone or with one or two others
Nights spent at home	( )	( )	( )	Nights away from home
Reading a book	( )	( )	( )	Going to movies
Belonging to many societies	( )	( )	( )	Belonging to few societies
Few intimate friends	( )	( )	( )	Many acquaintances
Many women friends	( )	( )	( )	Few women friends
Fat men	( )	( )	( )	Thin men
Tall men	( )	( )	( )	Short men
Jealous people	( )	( )	( )	Conceited people
Jealous people	( )	( )	( )	Spendthrifts
People who talk very low	( )	( )	( )	People who talk very loudly
People who talk very fast	( )	( )	( )	People who talk very slowly

Part VIII. ***Rating of Present Abilities and Characteristics.*** Indicate below what kind of a person you are right now and what you have done. Check in the *first* column ("Yes") if the item really describes you, in the *third* column ("No") if the item does not describe you, and in the *second* column (?) if you are not sure. (Be frank in pointing out your weak points, for selection of a vocation must be made in terms of them as well as your strong points.)

	YES	?	NO
Usually start activities of my group	( )	( )	( )
Usually drive myself steadily (do not work by fits and starts)	( )	( )	( )
Win friends easily	( )	( )	( )
Usually get other people to do what I want done	( )	( )	( )
Usually liven up the group on a dull day	( )	( )	( )
Am quite sure of myself	( )	( )	( )
Accept just criticism without getting sore	( )	( )	( )
Have mechanical ingenuity (inventiveness)	( )	( )	( )
Have more than my share of novel ideas	( )	( )	( )
Can carry out plans assigned by other people	( )	( )	( )
Can discriminate between more or less important matters	( )	( )	( )
Am inclined to keep silent (reticent) in confidential and semi-confidential affairs	( )	( )	( )
Am always on time with my work	( )	( )	( )
Remember faces, names, and incidents better than the average person	( )	( )	( )
Can correct others without giving offense	( )	( )	( )
Able to meet emergencies quickly and effectively	( )	( )	( )
Get "rattled" easily	( )	( )	( )
Can write a concise, well-organized report	( )	( )	( )
Have good judgment in appraising values	( )	( )	( )
Plan my work in detail	( )	( )	( )
Follow up subordinates effectively	( )	( )	( )
Put drive into the organization	( )	( )	( )
Stimulate the ambition of my associates	( )	( )	( )
Show firmness without being easy	( )	( )	( )
Win confidence and loyalty	( )	( )	( )
Smooth out tangles and disagreements between people	( )	( )	( )
Am approachable	( )	( )	( )
Discuss my ideals with others	( )	( )	( )

Worry considerably about mistakes	( )	Worry very little	( )	Do not worry	( )
Feelings easily hurt	( )	Feelings hurt sometimes	( )	Feelings rarely hurt	( )
Usually ignore feelings of others	( )	Consider them sometimes	( )	Carefully consider them	( )
Loan money to acquaintances	( )	Loan only to certain people	( )	Rarely loan money	( )
Rebel inwardly at orders from another, obey when necessary	( )	Carry out instructions with little or no feeling	( )	Enter into situation and enthusiastically carry out program	( )
When caught in a mistake usually make excuses	( )	Seldom make excuses	( )	Practically never make excuses	( )
Best-liked friends are superior to me in ability	( )	Equal in ability	( )	Inferior in ability	( )
Handle complaints without getting irritated	( )	Become annoyed at times	( )	Lose my temper at times	( )
Borrow frequently (for personal use)	( )	Borrow occasionally	( )	Practically never borrow	( )
Tell jokes well	( )	Seldom tell jokes	( )	Practically never tell jokes	( )
My advice sought by many	( )	Sought by few	( )	Practically never asked	( )
Frequently make wagers	( )	Occasionally make wagers	( )	Never make wagers	( )

Record the time when you finished this page.....

Number of minutes required to fill out the blank.....

Be Sure You Have Not Omitted Any Part; Note Particularly the Second Columns on Pages 2 and 4.

Group.....

Key Number.....

Occupation	Adv.	Arch.	Artist	CPA	Chem.	Doctor	Engineer	Farmer	Journalist	Lawyer	Life Ins. Salesman	Minister	Personnel	Psych.
Ia														
Ib														
II														
III														
IV														
V														
VI														
VII														
VIII														
Total														
Rating														

Occupation	Purchasing Agent	Real Estate Salesman	School Man	Vacuum Cleaner Salesman	Y.M.C.A. Gen. Secy.	City School Supt.	Office Clerk	Mathematician	Physicist					
Ia														
Ib														
II														
III														
IV														
V														
VI														
VII														
VIII														
Total														
Rating														

MANUAL
for
Vocational Interest Blank
by

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SEPTEMBER 1931

MEN engaged in a particular occupation have been found to have a characteristic set of likes and dislikes which distinguish them from men following other professions. Scores on the *Vocational Interest Blank* are a measure of how nearly a man's interests coincide with those of the average man successfully engaged in a certain occupation.

For the purposes of this test it is assumed that a man will be more effective in his vocational career if he is engaged in work that he likes than if he is forced to do a great many things that he dislikes. If he is given his own free will in the matter, it is apparent from surveys made at Stanford University that his general interest will, to a surprising extent, influence his choice of a career.

It will be some time before the validity of this test can be exactly determined. Results so far obtained show that the test has genuine merit. Nevertheless, the test should be used only by those who approach the problem of vocational guidance with an experimental point of view and who will use the test results with proper safeguards.

The blank must be scored separately for each occupational scale. If scores, for example, are desired upon all twenty-four of these occupations, it is necessary to score the blank twenty-four times. After some practice an individual can score the blank five to ten times in an hour. Many attempts have been made to devise an easier method of scoring. But so far all attempts, though yielding high correlations with the present method, have given too low validity to be considered.

In diagnosing a man's occupational interests it is very helpful to compare scores from all the 24 scales, for in this way the interest pattern may be more clearly ascertained. In many cases the

Occupational Interests That Can Be Determined by the Test

Scoring scales (stencils) have been printed for the following twenty-four occupations:

Advertiser
Architect
*Boy Scout Master
Certified Public Accountant
Chemist
City School Superintendent
Engineer
Farmer
Journalist (newspaper editor)
Lawyer
Life Insurance Salesman
Mathematician
Minister
Office Clerk
Personnel Manager
Physician and Surgeon
Physicist
Psychologist
Purchasing Agent
Real Estate Salesman
School Teacher and Administrator
Vacuum Cleaner Salesman
Y.M.C.A. General Secretary
*Y.M.C.A. Physical Director

Those starred have just been published.

satisfactory short-cut may be used of scoring the blank on only one, two, or three scales, since the typical student is concerned with only two or three options at any one time. The student who does not know what he wants to do needs more help, and usually it is of great value to score his blank on all 24 scales. If this is not feasible, due to the labor involved, then it is suggested that the blank be scored first for engineer, physician, lawyer, advertiser, life insurance salesman, certified public accountant, personnel manager, school teacher, and purchasing agent, as these represent the widest range of occupational interests. Further exploration may be made using the following correlations between occupational interests.

Engineer: Chemist .88, Farmer .76, Architect .57, Physician .53, Psychologist .44.

Physician: Artist .76, Architect .71, Psychologist .71, Chemist .68, Engineer .53, Farmer .41.

Lawyer: Journalist .83, Advertiser .69, C.P.A. .48, Real Estate Salesman .35, Artist .35, Life Insurance Salesman .31.

Advertiser: Journalist .80, Lawyer .69, Real Estate Salesman .58, Life Insurance Salesman .43.

Life Insurance Salesman: Real Estate Salesman .85, Advertiser .43, Y.M.C.A. General Secretary .38, Lawyer .31.

Certified Public Accountant: Lawyer .48, Journalist .33.

Personnel Manager: Y.M.C.A. General Secretary .72, School Teacher .40, Purchasing Agent .30.

School Teacher: Minister .78, Y.M.C.A. General Secretary .61, Psychologist, .47, Personnel Manager .40.

Purchasing Agent: Chemist .36, Farmer .35, Real Estate Salesman .32, Personnel Manager .30.

Interest in occupations requiring selling may be measured by the three selling scales now available—for life insurance, real estate, and vacuum cleaner salesmen. A scale for selling generally would be of doubtful value, because the commodity sold is an important consideration.

Instructions for Giving Test

Two forms of the Vocational Interest Blank have been printed, the original form (to be hereafter referred to as *Form A*) and *Form B*. They differ only with regard to the first page. Form B, for students, calls for various educational and occupational interests, applicable only to students. The original form is better adapted for use with men who have been out of school several years.

The instructions for giving the test are printed on the blank. With one exception, stated below, there is no particular need for supervision of any sort. No time limit is given, but it is believed that better results will be obtained with the individual checking the blank rapidly. A truer test of likes and dislikes is possible if first impressions are given.

The present blank is a development of earlier blanks of Miner, Moore, Ream, Freyd, and Cowdery. It consists of eight pages covering a total of 420 items, 176 of which have been taken directly from the Cowdery blank. Methods of scoring the blank, and results so far obtained from use of the Cowdery blank, are given in the first eight references in the Bibliography, pages 9–10. The remaining references refer to the present blank.

As an Admission Requirement. Some data have been collected indicating that students preparing to enter an occupation on which they rate A or B on the interest test obtain higher scholastic grades than students rating C. If further research sustains this finding it would warrant the test being used as an admission requirement, wherever applicable.

There is, however, a very serious objection to its use in this connection. It has been demonstrated that if students desire to, they can raise their

scores quite significantly in engineering and teaching interests. Consequently, if the test is employed for admission purposes, it should be given with maximum emphasis upon filling the blank in minimum time, in order to prevent students figuring out the proper responses. (The time required by adult men is: Range 20 to 120 minutes. Q_3, 25; Med., 30; Q_1, 37 minutes. From boys in the junior class in high school the following data have been obtained: Q_3, 29.3; Med., 35.7; and Q_1, 43.5 minutes. Eleven per cent of this group of over 1,000 required 50 or more minutes.)

It is suggested that the time limit of 35 minutes be announced, that a clock be visible to all, that papers finished before 35 minutes be immediately collected and elapsed time indicated on all, particularly those turned in after 35 minutes.

When men are really desirous of knowing what occupation they should enter, there is no danger that they will falsify their reactions. For this reason it seems preferable to give the test so that this motive is appealed to, whenever possible.

Scoring the Blank

The entire blank must be scored for each occupational interest, using a different scoring scale in each case. A scoring scale (stencil) includes nine slips of cardboard, corresponding to the nine parts of the test. On each slip are printed three columns of figures. To illustrate this and the method of using the scale the first five items on the blank are given below and opposite them the scores which appear on the scoring scale for lawyer interest.

Actor	L	I	D	1	–1	0
Advertiser	L	I	D	–7	0	4
Architect	L	I	D	–2	0	3
Army Officer..	L	I	D	1	–2	0
Artist	L	I	D	–2	–1	3

If a person should circle L opposite all five of these items he would be given the following scores: 1, –7, –2, 1, and –2, totaling –9. On the basis of these five items he does not have the interests of a lawyer. To score the blank, then, one must ascertain the 420 scores assigned to the L's, I's, and D's that have been circled and then total them, observing the algebraic signs.

If an item is circled for two of the three letters, "L" "I" "D," use the average of the two scores. If all three letters are circled opposite an item, do not score any of them.

In *Part VI,* three items are marked as first choice and three as last choice in each of the four sections. Score these as though they were "L" and "D" items, respectively. The remaining items that are not indicated should be scored as though they were "I" items. If a single item is indicated in Part VI as first or last choice, score all items not indicated as in the "I" column.

Scoring can be done by hand or on the Hollerith machine. Methods of scoring by hand are:

1. As each score is ascertained from the scale it may be written down on the blank or on a separate sheet of paper. The plus and minus numbers may then be totalled and the difference obtained. A separate sheet of paper is not needed unless the blank is scored more than five times.

2. Some persons are able to total the scores mentally as they note the proper weights. Twice as many blanks can be scored by this second method as by the first method. But relatively few individuals can use this method.

3. The *most satisfactory method* is to use two Veeder counters (Nos. ZD–18–T and ZD–8–T manufactured by the Veeder Manufacturing Company, Hartford, Connecticut, and sold for $6.00 apiece). These counters are fastened on a flat piece of wood so that the levers are fairly close together—counter No. ZD–18–T at the left with its lever on the right and No. ZD–8–T on the right with its lever on the left. Each score is tapped out on one

or the other of the counters according as it is a plus or minus score. The totals at the bottom of each column should be jotted down so that if a mistake is made the counters can be reset and only that column be rescored. Use the index finger on the left counter to record plus scores, the second finger on the right counter to record minus scores. This method of scoring can be used by almost anyone and all day long. From our experience, after a little practice, five to ten blanks can be scored per hour for any one occupational rating.

No one at Stanford has found the adding machine satisfactory in this connection. The small numbers can be added faster mentally than they can be entered on the machine. It is possible, however, to use it in place of the counters, i.e., to use only two keys on the adding machine, the "one" in the units and thousands columns for plus and minus numbers, respectively; and to tap out all numbers (a score of five is recorded by hitting the key five times). The eyes can be focused continuously on the blank and scale and the right hand can record the scores without visual control.

4. An additional method may be mentioned as it may be used to advantage in educational institutions. After a class has filled out the blank, the instructor can call out the scores for each item and each student can enter on his blank the appropriate numbers. They can then add up the figures and determine their own scores. As the value of the test might be vitiated if the scores for items became known, it is essential to collect the blanks when they have been scored in this way.

Scoring on the Hollerith machine requires rather extensive equipment. Consequently, this method will appeal only to those who have many blanks to score. The author charges $2.00 for scoring a blank on all twenty-four scales or $1.50 each for twenty-five or more blanks mailed together.

The procedure in scoring on the Hollerith machine, as developed by Mr. Rulon, is as follows: A Hollerith card is provided for liking, another for indifference, and another for disliking each of the 420 items, making 1,260 cards in all. Each of these cards has punched on it the appropriate scores for the twenty-four occupational scales. When a blank is scored, cards are taken from the file corresponding to the circlings on the blank. (Cards can be "pulled" for approximately five blanks an hour.) The cards are then run through the tabulator and totals for ten scales recorded. They must be run through twice more to obtain the totals for the remaining fourteen scales. When this has been accomplished, the cards are run through the sorter and finally returned to the file to be used again.

At Stanford we have found twenty-five duplicates sufficient, thus employing 31,500 cards in all. The cards are kept in open files 15″ × 10¾″ with two partitions 15″ × 4″ that run longitudinally. Heavy cardboard dividers keep the cards separated. These are deeply notched so as to fit over the two partitions. The assistant pulls out with his right hand the like, indifferent, or dislike card, according as the blank is marked opposite item one, and places it on the table, while with his left hand he pulls the first divider forward, exposing the cards for item two. This is repeated for the 420 items.

Ratings

With each scale there are given two critical scores so that the raw scores may be stated in terms of the three ratings A (Yes), B (Not sure), and C (No). These critical scores are based on the records of our criterion group for the occupation named. The first critical score separates ratings A and B; it separates the ¾ of the criterion group obtaining the highest scores from the remainder. (Statistically it lies at –1Q.) The second critical score separates ratings B and C; it is usually located at –3.5Q. In

nearly every case a rating of "C" means that 98 to 100 per cent of the criterion group scored higher than the person obtaining the rating of "C."

From our data it appears that few men rate "A" in any occupation except their own, whereas a considerable number rate "B" in other occupations than their own. A rating of "A" may be interpreted to mean the person has the interests characteristic of the occupation in question, whereas a rating of "B" is not conclusive proof that he belongs to that occupational group with respect to his interests. Many students who change their major, for example, rate "B" in the occupation that they have dropped. They had some interest, but not sufficient to keep them in that type of work. It must be kept in mind, however, that by definition one-fourth of our criterion group are assigned a rating of "B"; that is, one-fourth of men who are known to be successful are rated "B."

If a man scores low, for example in the interests of lawyers, it means that he would not like that occupational environment. If he scores high, on the other hand, the score may be interpreted in three ways depending upon how he scores in other occupational interests. First, if he scores higher in law than in any other occupation, presumably he should enter law. Second, if he scores higher in some other occupation than in law, he possibly should enter that other occupation. But third, he may better plan his career to utilize his interests in two or more occupations. Thus, if he scores high in both law and engineering he might prepare for both and become a patent attorney, or a lawyer specializing in engineering problems. Our data indicate that there are men whose interests seem to be restricted to a rather narrow field, and others whose interests embrace many occupational activities. And these records agree with what these men devote themselves to.

In most psychological tests the higher the score the more the individual has of the trait in question. In this test the score is a measure of how nearly a man's interests coincide with those of the *average* man successfully engaged in that occupation. As far as we have been able to determine the matter, it appears that there is zero correlation between degree of success and interest score within the range of "A" ratings. This zero correlation becomes a low positive correlation when both "A" and "B" ratings are considered, which means that more "B" men rank low in success than high. But some "B" men rank very high, so that no diagnosis may be made of degree of success from interest scores in any particular case. When "C" ratings are reached the situation changes. Apparently these men have too little interest to belong to the group. In other words, those rating "C" are not often found engaged in the occupation, and if they are so engaged are either indifferent successes who will soon drop out or are carrying on the work in some more or less unusual manner.

Ratings should be employed in announcing the results of this test for two reasons. First, the average person can understand ratings which mean "Yes," "Not sure," and "No," whereas the raw scores are difficult to explain, particularly as they vary in range with the various occupations. Second, since there is no evidence that a high "A" rating means superiority in any significant sense over a lower "A" rating, to announce raw scores will inevitably give this impression, since in all other tests, the higher the score is, the better.

It should be noted that this rating system gives high reliability to the "A" and "C" ratings, which mean Yes and No, and it throws the doubtful cases into the "B" rating which is defined as doubtful. Instead of using a single critical score to divide the Yes and No ratings, a broad band is used to divide these two and this band is made broad enough to cover

the doubtful cases. With this procedure, practical use may be made of a test before it is well standardized; and as it is improved the per cent of doubtful "B" ratings may be decreased and that of positive "A" and "C" ratings increased.

To Whom the Test Should Be Given

The scales and norms are based upon *adult men.* Our results indicate in the case of *college men* (20 to 30 years of age) that the test can be used with success. An extensive study of 2,340 records of men between the ages of 20 and 60 indicate that there are small but nevertheless significant changes in interests with age. When occupational scales are based on criterion groups averaging between 40 and 45 years of age, instead of obtaining 75 per cent of A ratings at each age level from men who belong to the occupation in question, there will be obtained 55 per cent of A ratings at 25 years; 72 per cent at 35, 82 per cent at 45, and 77 per cent at 55. The younger the man is, particularly below 35, the less chance he has of receiving an A rating. Fortunately, however, the per cent of A and B ratings combined is affected very slightly by change in interests with age. About 98 per cent of 35-, 45-, and 55-year-old men will be rated A or B, and about 95 per cent at 25. Consequently, age must be taken into account in interpreting ratings on this blank. Three per cent of 25-year-old men who should be rated B or B– will be rated C, and 20 per cent who should be rated A will be rated B+ or B. There is here very little error (about 3 per cent) due to age in classifying the men as to whether they belong (ratings A and B) or do not belong (rating C) to the occupation in question. But the chances of stating with reasonable certainty (rating A) that he belongs are cut down 20/75ths. Changes in age, apparently, affect certainty of classification very much more than mere classification. Whether this will hold for ages from 15 to 25 remains to be determined.

There are no data upon *high school boys.* Their scores probably average lower than what these same boys will obtain ten years later. Allowance should be made for this constant error in the test.

There are no data upon *women.* It is very questionable whether women should be scored upon this test. They should not be given their ratings unless an emphatic statement is made that no one knows the significance of their ratings. Miss Hogg's study makes clear that similar scales for women can be developed, but this has not yet been done for this blank.

Reliability

Using the "odds versus evens" technique twelve coefficients of reliability have been obtained which average .797 (Table 1). The CPA interest scale, however, gives coefficients much below those of the lawyer and architect scales. Cowdery (1926) reported fifteen coefficients of reliability based on the same method of calculation for his blank of 263 items, ranging from .661 (±.039) to .905 (±.014) and averag-

TABLE 1

Coefficients of Reliability (Spearman-Brown Formula) of Three Interest Scales with 420 Items

	83 Lawyers	50 Architects	45 CPA	100 Seniors	Averages
Lawyer scale (odds vs. evens).....	.907	.897	.894	.901	.900
Architect scale (odds vs. evens).....	.827	.792	.798	.904	.830
CPA scale (odds vs. evens).....	.635	.638	.807	.562	.661
Average of 12 coefficients.....					.797

ing .792. This average coefficient equals .856 if calculations are made on the basis of 420 instead of 263 items.

A superior method of calculating reliability involves using the entire blank twice. Sixty-one ministers and thirty-two certified public accountants filled out Cowdery's blank and one and a half years later the present blank. The blanks were scored for interest in both these professions, using only the 176 items common to both blanks, with results as given in Table 2.

As there is almost no overlapping between the interests of ministers and C.P.A.'s, the first four correlations measure permanency of interests over only one-half of either scale. The true measure would therefore be higher than .74 to .81. On the other hand, the last two correlations are too high for although they involve the whole scale they are based upon data in bimodal distributions.[1]

On the present blank there apparently would be obtained a correlation of reliability for most of our scales of about .85 if all 420 items were considered and sufficient data obtained to give a normal distribution over the entire scale. (Reliability of the C.P.A. scale is, however, much lower.)

TABLE 2

Reliability of an Interest Test of 176 Items. Interval of One and a Half Years

	Scored for Interests of Ministers		Scored for Interests of C.P.A.'s	
Data from 61 ministers	.75	±.04	.77	±.04
Data from 32 C.P.A.'s	.81	±.04	.74	±.06
Data from both groups combined	.90	±.02	.84	±.03

Validity

The validity of this test, as that of any test of future performance, can only adequately be determined by following the careers of large groups for a considerable period of time. In the meantime validity may be based upon three less adequate determinations.

Table 3 (p. 8) indicates the extent to which the interest test differentiates engineers from non-engineers. (Similar tables could be given with respect to other occupations besides that of engineering if space permitted.) On the average only 15 per cent of 933 non-engineers rate "A" in engineering interest in contrast with 75 per cent of engineers who rate "A." But the non-engineers who rate "A" in engineering are not evenly distributed among all occupations; they are largely found among occupations involving applications of the physical, and to a lesser degree the biological, sciences.

The interest test not only differentiates one occupational group from other occupational groups as shown above, but it also differentiates younger, college men in such a way as to harmonize very well with their vocational choices.

Of 286 college Seniors at Stanford (1926–27):

8 % rate "Yes"—You have the interests of a lawyer.

35% rate "Not Sure"—Maybe you have the interests of a lawyer.

57% rate "No"—You do not have the interests of a lawyer.

Of 34 Seniors majoring in Law (included in the 286):

24% rate "Yes"—100% of these intend to enter law.

62% rate "Not Sure"—69% of these intend to enter law—21% are undecided.

15% rate "No"—0% of these in-

[1] In 71 per cent of the cases there was no change in checking these 176 items; in 26 per cent there was a change from liking to indifference and vice versa or from indifference to disliking and vice versa; and in 3 per cent there was a reversal of interest shown by changing from liking to disliking or vice versa. (Strong and MacKenzie, 1930.)

TABLE 3

Extent to which men in 17 occupations are rated for engineering interest

Occupations	Percentage Rated A	B	C
Chemists	47	50	3
Farmers (agricultural college graduates)	37	49	14
Architects	34	54	12
Psychologists	24	46	30
Physicians and surgeons	22	53	25
Personnel managers	19	36	45
Purchasing agents	14	56	30
Public accountants	13	51	36
School teachers and administrators	12	46	42
Lawyers	8	39	53
Journalists (newspaper editors)	7	31	62
Artists (painters)	6	49	45
Real estate salesmen	4	28	68
Authors	3	33	64
Ministers	2	25	73
Advertising men	0	35	65
Life insurance salesmen	0	23	77
Average	15	40	45

tend to enter law—40% are undecided.

Of 252 Seniors not majoring in Law (included in the 286):

6% rate "Yes"—10% of these intend to enter law—37% are undecided.

31% rate "Not Sure"—5% of these intend to enter law—33% are undecided.

63% rate "No"—1% of these intend to enter law—34% are undecided.

These results are about what one would expect. About one-third of these seniors have not yet decided upon a career and many who have will change their plans in the future. Consequently we would view a guidance test with suspicion if it gave results that correlated too highly with what seniors are planning to do. The only way to determine the accuracy of the test is to follow these men for five and probably ten years and compare their careers with the present scores.

A follow-up of these Stanford students over a two-year period makes possible a third expression of validity of this test. In March 1927 (see Table 4), the seniors filled out the interest blank and expressed their vocational

TABLE 4

Percentages of Stanford Seniors who are entering occupations on which they scored first, second, third, etc., among eighteen: based on their plans in March 1927 and in January 1929. The percentages according to chance are given in the third column.

Rank-order	March 1927	January 1929	Based on Chance
1	46	47	5.5
2	17	20	5.5
3	14	12	5.5
4	10	10	5.5
5	4	4	5.5
6	2	2	5.5
7–9	3	3	16.5
10–18	4	2	50.0

program. Again in January 1929 they stated their vocational plans. During this interval fully 96 per cent remained in ignorance of their interest test scores, so that these cannot have

influenced the following results. Utilizing all the blanks of students, who are sure of their choices and who are entering one of the 18 occupations for which the blanks have been scored, we find that 63 per cent were sure in March 1927 that they were going into that occupation on which they scored highest or second highest on the test. In January 1929 this percentage had risen to 67. This difference of 4 per cent is not statistically significant. It indicates, however, that interests of young men between 20 and 25 years of age continue to be significant indicators of their future actions for at least two years. According to chance 50 per cent of these men should be entering occupations on which they scored 10th to 18th among 18 occupations. As an actual fact only 4 per cent were so headed in March 1927 and but 2 per cent in January 1929.

Revised Scales and Norms

The present scales include weights between 30 and –30. When adult men are tested, these weights are probably superior to any modification. But when younger men are tested, it appears that they are often seriously penalized because of mere ignorance. For example, if a young man, who should become a certified public accountant, knows nothing of this occupation, as is true of many college men, he is apt to mark it as "indifferent." For this he is scored –9. If he had marked it as "liked" he would have received a score of 30. A penalty of 39 seems excessive. As the test is used primarily for vocational guidance purposes, it has seemed appropriate to limit weights between 15 and –15. The change affects only 44 weights on the eighteen scales first published. Those wishing to take advantage of this revision may easily do so by reducing all weights above 15 (or –15) to 15 (or –15). The norms given in Table 5 are in terms of this revision; they are also based in several instances upon a larger criterion group than previously announced. (Occupational scales not listed in this table have no weights exceeding 15.)

Norms on 420 Items

Certain norms for each of the 420 items on the blank are published in the appendix of *Change of Interests with Age* (see 13 below), such as:

a) Percentage of "men in general" who (1) like and (2) dislike the item.

b) Percentage of men from eight occupational groups who (1) like and (2) dislike the item, at ages 25, 35, 45, and 55.

c) Difference in (1) liking and (2) disliking between men at 25 and 55.

d) Difference in attitude index between men at 25 and 55.

e) Number of shifts between reactions of men at 25 and 35, at 35 and 45, at 45 and 55, and at 25 and 55.

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TABLE 5

Revised Norms, applicable when scoring weights, are restricted to range of 15 to −15

Occupational Scale	Number in Criterion Group upon which Scale is based	Number in Criterion Group upon which Norms are based	Range	Q_3	Median	Q_1	Critical score dividing A and B+	Critical score dividing B+ and B	Critical score dividing B and B−	Critical score dividing B− and C	Per cent rated C
Advertiser	60 + 49[1]	60	49 to 674	520.0	440.0	346.7	347	267	181	50[2]	0
Architect	100	114	25 to 625	461.4	384.3	298.3	299	222	140	99	2
Certified Public Accountant	90 + 68	100	−61 to 477	296.0	238.0	162.9	163	105	39	6	2
Chemist	118	148	−72 to 461	324.0	265.3	196.3	197	138	74	42	3
Farmer	98	187	−298 to 602	367.2	264.3	151.9	152	50	−58	−112	2
Journalist	130	122	−155 to 681	473.8	340.0	145.0	145	12	−71[3]	−153[3]	1
Lawyer	190 + 73	195	−68 to 523	403.2	288.8	195.9	196	82	−22	−73	0
Life Insurance Salesman	212 + 82	220	−25 to 598	380.0	298.8	207.1	208	126	40	−3	1
Physician and Surgeon	332 + 96	337	−120 to 462	317.9	244.8	157.6	158	85	5	−36	2
Psychologist	129	129	70 to 599	471.9	383.6	286.4	287	199	106	59	0
Purchasing Agent	100	120	−72 to 451	302.5	234.5	146.7	147	79	1	−38	1
Real Estate Salesman	101	126	−93 to 605	410.0	284.0	162.0	162	98	36	−26[4]	2
School Man	194 + 60	280	−48 to 544	317.1	246.3	153.8	154	83	2	−39	1
Vacuum Cleaner Salesman[5]	119	119	−70 to 650	437.0	339.0	222.0	222	124	17	−37	
Y.M.C.A. General Secretary	100	99	−81 to 767	548.3	432.5	298.8	299	183	59	−4	1

[1] When two numbers are given in this column, the second refers to Cowdery blanks. On these blanks are 176 items which also appear on the present blank.

[2] −4.5Q instead of −3.5 due to distribution of few cases.

[3] Due to skewed distribution −2.5Q and −3.0Q are used as critical scores instead of −3.0Q and −3.5Q.

[4] Due to skewed distribution −1.5Q, −2Q, and −2.5Q are used instead of −2Q, −3Q, and −3.5Q.

[5] Data are estimated, as blanks are no longer in our possession.

JOB COUNSELING SERVICE

COUNSELORS INTERVIEW RECORD

NAME OF COUNSELEE:_____

DATE OF INTERVIEW	SUBJECT OF DISCUSSION	PROGRAM OF ACTION

Dear Mr.

I note that you are a member of the Job Counseling Service and that I have been selected as your counselor. If convenient for you, I can see you at_____on_____ at_____o'clock.

If this appointment is not satisfactory, I will arrange another if you will telephone me at_____ _____between_____and_____o'clock.

_____
Counselor

_____
SIGNATURE OF COUNSELOR

QUESTIONNAIRE

Name _____

Address _____

_____

	Please Check YES	NO
1. Did the Job Counseling Course help you to think more clearly about a vocation	....	....
2. Did you get a clearer picture of your own aptitudes, abilities and personality	....	....
3. Have you been working since you took the course..... Briefly, what kinds of jobs? _____	....	....
4. Are you working now..... Nature of work_____	....	....
5. What education have you undertaken since the course_____		
6. Did the evening lectures in the course prove valuable to you.....	.....	.....
7. Did the group meetings help you in selecting a vocation	....	....
8. Were your contacts with your individual counselor of value to you	....	....
9. What did you do to better your situation as a result of talks with your counselor? _____		

Remarks:

CONDENSED QUESTIONNAIRE

THIS SIDE OF CARD IS FOR ADDRESS

Have you worked since the course? Yes No

What work_____

Are you working now? Yes No

What work_____

What courses of study have you taken since this course?

Did you benefit from the evening lectures? Yes No

Did you benefit from the afternoon lectures? Yes No

Did you benefit from the individual counseling? Yes No

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